American Aviation

MANAGEMENT
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EQUIPMENT

MAY 12

1952

C. H. Calhoun, director of maintenance and engineering, National Airlines (See Page 4)

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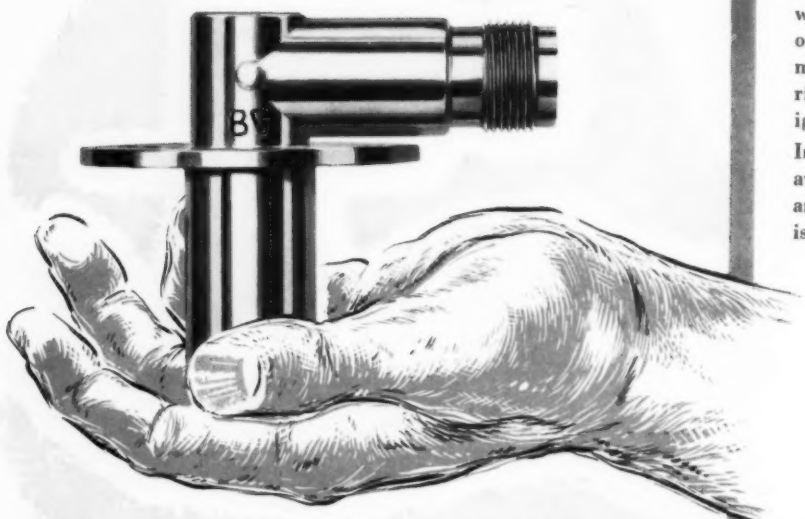

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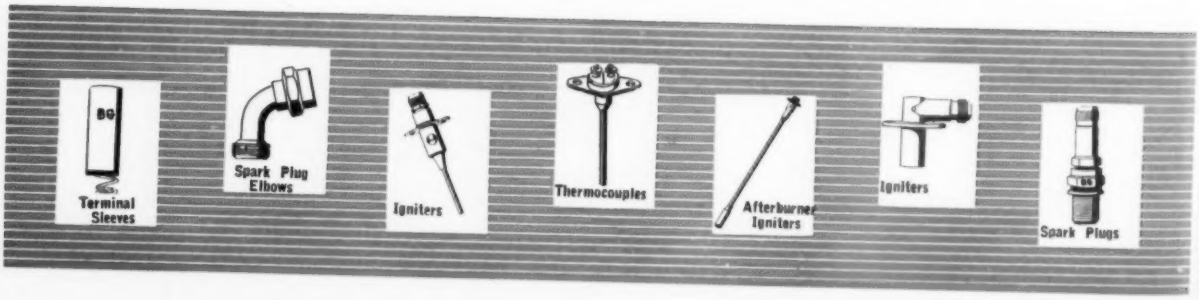

Trends

Aircraft manufacturers during next few months will show only minor increases in backlogs, and some will even reflect lower backlogs than existed at the end of 1951. Air Force is holding off placing big aircraft orders at present.

•

There are "certain serious obstacles" to the much-discussed Convair-Atlas-Kaiser-Frazer merger, according to Floyd B. Odlum, board chairman of Convair and Atlas. He said he based his statement on his own analysis plus that of an independent survey group.

•

Indications are that Pratt & Whitney will be asked to re-open its production line for R-2180 engines. This engine powers the Saab Scandia and might be used in other local-service airline planes if military use assures production.

•

More and more airport operators are burned up by what they consider high-handed methods of military services in enforcing demands for exclusive use, or highly restricted and financially prohibitive provisions for limited civil use.

•

First scheduled passenger flight of the deHavilland Comet on BOAC's London-Johannesburg route is expected to start a new cycle of developments in this country aimed at closing the gap in U.S.-British jet transport progress.

•

Increases in airline operating expenses continue. Complete February figures show that domestic trunk lines' net operating income was off 76.8% from same 1951 month, totaling $1,090,499. A 16.4% gain in gross revenues was overshadowed by a 27.2% jump in operating expenses. U.S. international and overseas operators showed an operating loss of $1,315,690 for the month, against operating income of $320,470 in February, 1951. Expenses were up 18% while revenues rose only 9.4%.

•

Non-scheduled airlines expect to lead the way among U.S. air carriers with introduction of rearward-facing seats in their transports. Two large irregulars have already ordered this type of seat for early delivery.

•

Modification of airlines' four-engined planes, to ready them for military duty in event of emergency, hasn't been started yet. Reason: contract terms haven't been agreed upon with the Air Force. Arrangements may be made for airlines to start work under letters of intent.

The Washington View

Study TV Tower Hazards

Lifting of the Federal Communications Commission "freeze" on new UHF television stations is expected to cause new headaches for pilots because of the transmitting towers which may be installed on or near airways and airports. As far as the Air Line Pilots Association, the Air Transport Association, and other aviation groups are concerned, any obstacle over two feet off the ground is a flying hazard.

The television industry feels, however, that there is no substitute for height to cover an area and much consideration is being given to the installation of TV towers ranging from 1,000 to 2,000 feet in height. Naturally, both views cannot prevail and some sort of compromise will have to be worked out. FCC and the Civil Aeronautics Administration, recognizing the problem, have set up a group to study the situation and make recommendations. The group is made up of representatives of both the air transport and television industries.

There are certain factors, however, which indicate the situation may not be as serious as it might first appear. In the first place, a 2,000-foot transmitting tower necessitates an outlay of 1 million dollars and many of the firms planning to file for FCC authorization to build TV stations may not care to invest that much in the tower alone.

Moreover, according to FCC Commissioner Edward M. Webster, few of the proposed stations may want such high towers, anyway. Of 500 applications for UHF video stations on file, he reports, only two specified towers of more than 900 feet in height. He adds, however, that these applications were filed before the freeze was lifted and some applicants may have changed their minds about tower height since then.

Boyer Laid the Groundwork

Harold R. Boyer's decision to step down as head of the Aircraft Production Board and return to General Motors Corp. nine months after he took over the Defense Production Administration job came at a time when the aircraft industry was finally starting to turn out the military aircraft the USAF wants in quantity.

DPA Administrator Manly Fleischmann has not yet chosen Boyer's permanent successor but that man, whoever he turns out to be, will find that the groundwork for large-scale production has been laid and his task will primarily be one of expediting. In the meanwhile, William L. Campbell, chairman of the DPA production committee, has been named acting APB chief.

When Boyer became head of APB, there were five major problems facing plane builders: machine tools, realistic production schedules, an urgency list agreed to by the military services, heavy forging capacity, and adequate controlled materials.

None of these problems has been completely licked, but Boyer, working in close cooperation with the Aircraft Industries Association and other groups, has cut several down to size. Machine tools for the aircraft industry, for example, are now being delivered because tool builders finally obtained the price relief they said they needed.

The "stretch-out" of plane production, i.e., the moving of the target date for the 153-wing Air Force from mid-1954 to mid-1955, was accomplished partially as a result of Boyer's insistence that there was no point in producing airframes without the engines and electronic equipment to go in them. As for an overall urgency list, the Pentagon has set up a list of "brickbat" items and is now extending it downward. Unfortunately, however, too many projects are still given priority on the basis of one each for the Army, Navy, and Air Force.

The aircraft industry's need for heavy forgings and extrusions is still far from solved, but the USAF's heavy press program and DPA's policy of awarding five-year tax write-off certificates for facilities to turn out these forgings is moving right along. Controlled materials have not been a major problem to aircraft builders since the steel-copper-aluminum allocation program started, although there have been numerous instances where plane manufacturers had to get help in placing orders at the mills.

Avgas Shortage Bears Out PAD

Walkout of 90,000 oil industry workers and the consequent curtailment of 30% of the nation's aviation gasoline production serves to prove how quickly all flying, military and commercial, would be jeopardized if such a situation should arise during an emergency. Under normal circumstances, the nation has a 30-day supply of avgas available. But the nationalization of Iran's Abadan refinery (and the resulting necessity that U.S. production make up the deficiency) had left the country with only about a two-week supply.

It was for that reason that the Petroleum Administration for Defense had to order a 30% reduction in the use of gasoline by commercial airlines for the 28-day period beginning May 6. The situation, incidentally, also seemed to bear out PAD's previous contention that the avgas supply was critical.

. . . Robert M. Loebelson

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in the F-84F Thunderjet

Tremendous speed and terrific hitting power make the Republic Aviation Corporation's F-84F Thunderjet a formidable addition to the U.S. Air Force's new jet fighting team. The optical properties of its Swedlow-made transparent enclosures contribute to the efficiency with which this versatile fighting machine can perform in action. With duplicated facilities in California and Ohio, Swedlow brings to the production of today's speedier aircraft, where precision more than ever counts, ten years of specialized experience in the precision engineering and production of astrodomes, canopies and other acrylic parts.

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1952

American Aviation

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ABC May 12, 1952 Vol. 15 No. 45 ABP

Cover Photo

C. H. CALHOUN, National Airlines' new system director of maintenance and engineering, is a veteran of 23 years in the airline industry. A native of Colorado, he began his aviation career with the U. S. Marine Corps in 1925. Four years later he joined Aero Corporation of California, a predecessor company of TWA, which operated Standard Airlines.

During 14 years with TWA, Calhoun was variously in charge of maintenance bases at Newark and LaGuardia, and was assistant system superintendent of maintenance from 1939 to 1943. In the latter year he was employed by Mid-Continent Airlines as director of engineering and maintenance, and was elected a vice president of the company three years later. He remained with MCA until joining NAL last month.

other publications

American Aviation Daily (including **International Aviation**): Published daily except Saturdays, Sundays and holidays. Subscriptions: $18 one month; $200 one year. Daniel S. Wentz II, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy, $7.50. Marion E. Grambow, managing editor.

Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. A. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, $11.00 one year, Canada, $11.50. All other countries, $12.50. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. Central 6-5804. C. N. Johnson, managing editor.

American Aviation Traffic News (incorporating **Air Tariff Reports**): Published daily except Saturdays, Sundays and holidays. Subscriptions: $150 a year. Preble Staver, managing editor.

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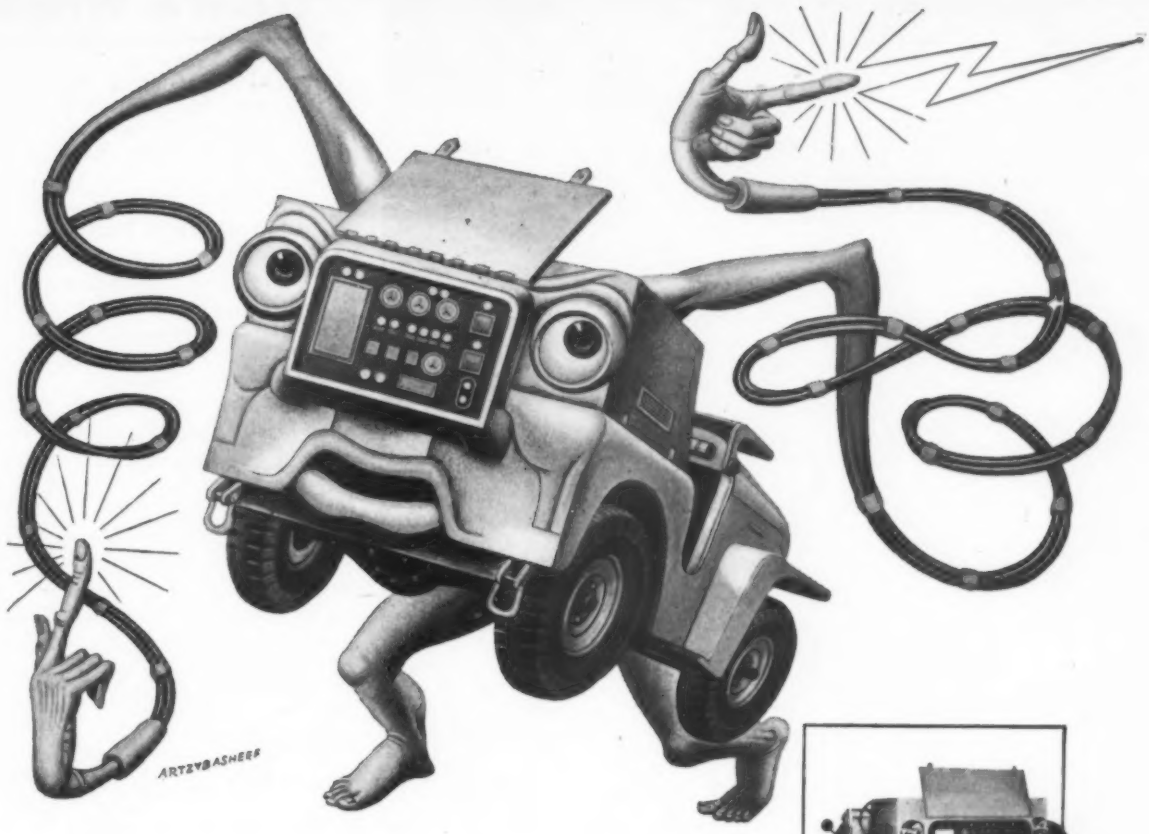
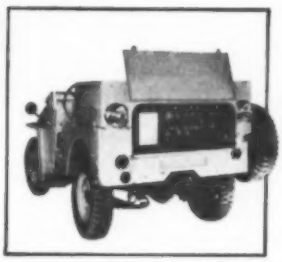


Meet a power generator with "legs"



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AVCO MANUFACTURING CORPORATION

When & Where

May 12-14—Institute of Radio Engineers, National Conference on Airborne Electronics, Dayton Biltmore Hotel, Dayton, Ohio.

May 14-16—Society for Experimental Stress Analysis, Spring Meeting, Lincoln Hotel, Indianapolis, Ind.

May 15-16—American Helicopter Society, 8th Annual Forum, Washington Hotel, Washington, D. C.

May 15-16—Southeastern Airport Managers' Assn., semi-annual meeting, Jacksonville, Fla.

May 17-18—National Pilots Air Meet and Races, Chattanooga, Tenn.

May 22-23—Aeronautical Training Society, Annual Meeting, Carlton Hotel, Washington, D. C.

May 22-24—American Society for Quality Control, Sixth Annual Convention, Syracuse, N. Y.

June 1-6—Society of Automotive Engineers, Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.

June 9-21—International Organization for Standardization, Triennial Meeting, Columbia University, New York

June 19-21—American Society of Mechanical Engineers, Applied Mechanics Division, Shock & Vibration Instrumentation Symposium, Pennsylvania State College.

June 23-27—American Society for Testing Materials, 50th Anniversary Meeting, Statler and New Yorker Hotels, New York.

July 4-9—All Women's Transcontinental Air Race, Santa Ana, Calif., to Teterboro, N. J.

July 8-12—Aviation Writers Association, Annual Convention, Ambassador Hotel, Los Angeles.

International

May 19—ICAO Standing Committee on Performance, 2nd Session, Copenhagen.

May 19—IATA, Technical Committee, Thirteenth Meeting, Copenhagen, Denmark.

May 21—IATA Financial Committee, 10th Meeting, Rome.

May 27—ICAO, Sixth General Session, Montreal.

June 4—Fourth International Mechanical Engineers Congress, Stockholm.

June 18—IATA, 23rd Executive Committee, Brussels.

NEW "CAT" IN THE SKY

Now the COUGAR, a sleek, swept-wing successor to the battle proved PANTHER, takes its place in a long line of famous Grumman fighters. Ruggedness and reliability are inherent in this newest turbo-jet. These are traditional Grumman characteristics that Navy and Marine pilots have used to advantage since early World War II days when WILDCATS were clawing Jap Zeros.

GRUMMAN AIRCRAFT ENGINEERING CORPORATION, BETHPAGE, LONG ISLAND, NEW YORK

Contractors to the Armed Forces

Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

Keeping Abreast

To The Editor:

I wish to compliment you on the improvement in your magazine. It has progressively become more interesting and I think you are doing a great service for the industry. It is my opinion that your "Trends" containing interesting tidbits is a fine addition. I particularly like the type of treatment followed by some of the news magazines which gives a lot of information in condensed form. No one in the airline industry should miss the opportunity of keeping abreast with the times or should be without a subscription to your magazine.

G. G. BROODER
Assistant to the President
Western Air Lines, Inc.
Denver, Colorado

Orchids

To the Editor:

Orchids are in order for you and your staff. It is gratifying to see new life and progress in the format of AMERICAN AVIATION. Congratulations.

R. P. HANDT
KOA, National Broadcasting Company
Denver, Colorado

Over Zealous

To the Editor:

The caption under the first picture, with your article "Turbojet Assist Ups DC-3 Performance," April 14 issue, appears to show some over-enthusiasm for the already good-looking scheme. I would guess that the two outboard sub-nacelles contain, not Palas booster units which "up" the thrust by 310 pounds each, but UAP units whose effect on thrust is in a downward direction.

C. D. LONG
South Bend, Ind.

Mandatory Item

To the Editor:

Your article in regards to Turbomeca Palas Turbojet application has a great deal of merit. Aside from all other advantages claimed for such installation, I believe "critical operational period" to be the most important for an installation of this type. Central mounting is the ideal location for reserve power in such emergencies.

It would be worth the time spent for safety committees to investigate the possibilities of such installation and then make it a mandatory item.

HIDEO YOSHIZATO
Airline Maintenance Inspector

Airman's Indignation

To the Editor:

Here we go again!

Because a pilot either misunderstood the IDL tower or chose to act on his own, another ship has cracked up and caused untold suffering and another tragedy. Again, the cry: "Shut down the airports!"

Why not close down the highways—the Jersey Turnpike—the Pulaski Skyway? Cars have killed a lot of people on those roadways. It wasn't the fault of Newark Airport that those ships crashed into homes built too close to the field. Nary a pilot wanted to crash and their families suffered just as much as the families of the groundlings.

No amount of legislation can stop aircraft from falling down when an engine quits or something goes haywire with the instruments or—yet again—if the pilot figures he can outguess the tower and loses. Stricter discipline (if needed) might help but it's my guess that any pilot will follow the tower's instructions, particularly when he's coming in on IFR, for the safety of his own neck if for no other reason.

It strikes me that Capt. Rickenbacker is only too right in laying the agitation for abandoning EWR to the Commies—that's one way to help cripple the USA—knock out the busiest and most important airports. It would seem a great deal more logical to insist on more rigid inspection and examination of aircraft and pilots—of these all-cargo airlines, in particular—and installation of all-weather aids where they don't exist.

The attitude of certain groundlings is disgusting when they sacrifice lives in traffic accidents in city streets, yet cry "Murder" when a luckless pilot crashes. They want orchids from Oahu and their mail yesterday, but they don't want aircraft flying into fields they've built their houses too close to.

AN AIRFREIGHT AGENT

First Chapel

To the Editor:

With reference to Mr. S. Ralph Cohen's letter in the March 3 issue of AMERICAN AVIATION: Mr. Gibbon's memory is quite right, as a Catholic church was opened at Shannon Airport in October, 1946.

The church is used regularly by clergymen and other passengers passing through Shannon.

P. MAHER
Manager, Shannon Airport
Ireland

(Thanks to Mr. Maher for setting the historical record straight. Logan International Airport at Boston, which claimed its new chapel that opened early this year was the world's first at any airport, must take second place.—Ed.)

Sacks Appeal

To The Editor:

Referring to the article "What Luggage Stands Up Best in Air Travel" in the March 31 AMERICAN AVIATION, the airline executives should ask the one who knows!

I definitely have the solution to the problem . . .

- I suggest passengers use 5-bushel oat sacks to dump their clothes into—cost per sack: less than 50c each.
- The seats in aircraft must be built to hold a large piece or two of luggage; let the passengers tip the red cap or carry their own luggage aboard and off the aircraft. This would save time, keep the passengers happy and send them on their way. Not the 30 or 45 minute delay waiting for baggage to be unloaded.

I hereby certify no luggage is made today or ever will be made to stand up to the handling of the airlines.

It was a grand thrill to see R. V. Carleton's picture on the front page.

GORDON C. ("BUSTED BAG") SHOOK
Military Air Transport Service
(on leave from Braniff Airways).

(For the luggage-makers' views on the problem, let skeptical Reader Shook see page 56.—Ed.)

Obituary

W. D. INNESS

W. D. "Hippy" Inness, 46, director of communications for National Airlines, died on April 25 at Theresa Holland Clinic, Leesburg, Fla., after a long illness.

He joined NAL in 1946 after serving three years with Air Transport Command as a lieutenant colonel. Before the war, he served as director of communications for Northwest Airlines.

Wings of Yesterday

25 Years Ago

A course in aviation medicine was started at Georgetown University Medical School, Washington, D. C., the first medical school in the country to include such a course in its curriculum.

•

Consolidated Aircraft Corp., Buffalo, N. Y., Boeing Airplane Co., Seattle, Wash., and Curtiss Aeroplane and Motor Co., received from the Navy contracts amounting to $1,708,967 for the purchases of 134 airplanes.

•

Curtiss Aeroplane and Motor Company's net earnings for 1926, after depreciation and reserve for federal taxes, was $413,316, as compared with $150,149 in 1925.

B.F.Goodrich

20% more landings with new B.F. Goodrich dimpled tire

THE NEW B. F. GOODRICH airplane tire has a stronger cord body and new wear-resisting tread with dimple-like indentations in the rubber. These dimples provide better distribution of the tire load and reduce exposure to tread cutting. The tread design is a complete departure from conventional ribbed treads.

Northwest Airlines has complete performance data on all types of tires. When B. F. Goodrich introduced the new tire, it was quickly added to their test program. As comparative records of dimpled tires began to come in, the results were impressive. Northwest engineers found it gave them 20% more landings per tire than the next best tire tested, recommended adoption of the new tire as standard equipment.

Northwest is the ninth airline to report a switch to the dimpled tire. Others who have tested and are using dimpled tires are Trans-Texas, Braniff, Capital, Continental, Empire, Mid-Continent, National, and West Coast.

B. F. Goodrich is now producing the dimpled tire in seven sizes. The new, longer wearing tire is another example of BFG's leadership in rubber research and engineering. Other B. F. Goodrich products for aviation include wheels and brakes, heated rubber, De-Icers, Avtrim, Plastilock adhesives, Pressure Sealing Zippers, inflatable seals, fuel cells, Rivnuts, accessories. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

Editorial

How to Get Rich — Round Two

To The Editor:

Your editorial about my book "How to Get Rich in Washington" in the issue of March 31 complimented me highly by stating that the book "has placed an entire industry (the certificated scheduled airline industry) on the defense." But I must write you in rebuttal because the editorial also said that my "entire approach is deceitful."

The deceit lies on the side of the CAB for its long refusal to break down publicly the distinction between mail pay and outright subsidy and for its attitude of helplessness when pushed to state a formula for figuring out the mail pay. The deceit lies on the side of President Truman for filling the CAB with officials, including Commissioners, who have been associated with the certificated lines. It is not the custom to put corporation lawyers or labor lawyers and other lawyers with special interest backgrounds on the Supreme Court. Unless the same custom guides appointments to the independent agencies, the agencies are bound to become tools of special interests.

Of course, I am glad that you find the book revealing and interesting until you reach the chapter on the CAB. But that chapter is not out of tune with the rest of the book. "Easy money comes in the form of protection which the government gives to vested interests," the book says on Page 15, and to my mind the CAB provides this kind of protection par excellence. The rise in air mail subsidy payments in a few years from $41,000,000 to $117,000,000 (at least) suggests the extent of the benefits which the certificated carriers obtain from the CAB, or rather through it.

What bothered me as an objective inquirer into the functioning of the federal government was not the simple fact that the CAB has kept the non-skeds out in the cold. The damaging effect is on the public. Whether the non-skeds are operated by bona fide veterans or, as you say, "sharp operators," the refusal to certificate them and the effort to drive them out of business limits competition in the sky, encourages inefficient scheduled lines to go on functioning (and thereby to draw more and more in subsidy at the taxpayers' expense) and holds back the development of air transportation.

I appreciate that the CAB and the certificated scheduled carriers have a side in this controversy. I examined it closely, and was not impressed as far as the problem dealt with in the book is concerned; since I was not writing a book about aviation in America, it was out of my province to show that I did have an "elementary knowledge of the industry, its growth, its regulation, its equipment problems, its operating economics, or the people in it," as you suggest I might have done.

If the industry accepts your good suggestion that it give more attention to its need for public relations, the public relations officers would serve the industry best not by trying to prove that the present relationship between the lines and the CAB is in the public interest but by finding out why that relationship strikes a disinterested inquirer as an unsound one from the public point of view.

BLAIR BOLLES

Washington, D. C.

IN THE March 31 issue we took Mr. Bolles to task because a chapter entitled "Privilege in the Sky" in his book on "How to Get Rich in Washington" lumped the certificated scheduled air carriers and the Civil Aeronautics Board into the general Washington scandal scene of tax evasions, easy money and undue influence. We accused Mr. Bolles of shoddy reporting and failure to cite evidence. It was quite obvious that he had fallen—unwittingly or intentionally—for the nonsked party line. We pointed out that it was the sharp nonsked operator, who picked up surplus equipment cheap or was leasing it for peanuts, who should have been the target for the book.

by W. W. R.

Mr. Bolles has replied, as you can see above, and his reply is as silly, as unthinking, and as poorly informed and inaccurate as the chapter in his book. So we have prepared the following brief but pertinent comments:

Memo to Mr. Bolles:

1. Reference your second paragraph, the idea that the CAB was deceitful in failing to separate subsidy from mail pay at the precise moment when you think it should, is downright silly. There is no industry in the country that lives more in a goldfish bowl than does the air transport industry.

At any time during the last fifteen years anybody who was interested in determining how much mail pay the airlines got could have determined it in very short order from published, sworn figures. If you had cared to separate the so-called subsidy from mail pay you could have chosen any formula that met your fancy—and used it.

Moreover, the CAB did separate subsidy from the mail pay as soon as it completed the studies attendant upon the Big Four Mail Rate case, and published those figures.

Just what formula would *you* choose, Mr. Bolles? The figures have long been available. There are an almost unlimited number of formulae that can be used; each one must be arbitrary in any case. Take Burlington, Iowa, or Topeka, Kansas, each served by several airlines. Mail pay plays a fairly important part in the cost of serving those cities because passenger revenues are not too high. How would *you* decide how much is mail pay and how much is subsidy—and who is being subsidized? The trouble with you, Mr. Bolles, is that you don't get down to cases—you sit on the sidelines and shout generalities about something you know nothing about. But you don't *have* to be on the sideline—this subject of mail pay versus subsidy has been open to everybody for fifteen years. If you do come aboard and start digging you'll feel pretty silly about writing what you did.

2. It's surprising how mixed up a guy can get when he stops being a reporter and starts writing conclusions about things he doesn't even check on. Take your sentence in the second paragraph stating that the CAB is *"filled with officials who have been associated with the certificated airlines."* No checking of the facts there, eh Mr. Bolles? No siree, the facts might spoil the story.

Well, here's the record. Out of the present five Board members, one was associated in a sub-

Wherever Man Flies

Hamilton Standard's long experience as the leader in propeller design and production is also devoted to supplying other equipment for such outstanding airplanes as the Boeing B-52, eight-jet bomber for the U. S. Air Force.

HAMILTON STANDARD

PROPELLERS ★ STARTERS ★ AIR-CONDITIONERS ★ FUEL CONTROLS ★ AUXILIARY DRIVES ★ HYDRAULIC PUMPS

ordinate capacity with the Air Transport Association on international *operations* problems—not economics. The other four have never in any way been associated with airlines, although to be frank we wish at times they had been—they might make more practical decisions! We know of one staff member who was once associated with an airline. And we can recall just two other Board members since 1938 who had been airline officials of sorts—neither in a policy-making position. These are mighty few exceptions in fourteen years, Mr. Bolles. You claim to be a reporter? An objective inquirer? Hah! *We* aren't calling you a liar, Mr. Bolles, the record does that.

3. Then, Mr. Bolles, you refer to the Supreme Court. Again you insist on cheating your readers of the facts. Certainly corporation and labor lawyers have been put on the Court. The great Brandeis was one of the outstanding labor lawyers in the country when he was appointed. Chief Justice Hughes was a very distinguished corporation lawyer at the time of his initial appointment. Probably 75% of the Supreme Court Justices for the past twenty-five years were active practitioners in one branch of the law or another prior to their appointments. Rather sloppy checking, eh, Mr. Bolles?

Vested Interests

4. Now let's look very carefully at the third paragraph of your letter because there are a lot of implications there. Please note your reference to "vested interests." Doesn't this automatically imply something insidious and evil in the mere existence of the scheduled carriers because, after all, these are what you call "vested interests." Now come, Mr. Bolles, what are you *really* after—ideologically, politically, and economically? Only you can answer that one. What do you want *in place of* the scheduled carriers, Mr. Bolles?

But let's look further. You like to throw figures around wildly, loosely—irresponsibly. You say that air mail subsidy payments (sic) have risen "in a few years" from $41 million to $117 million (at least). Why not state the facts; they are all very easily available to a reporter or an inquirer. Apparently what you're driving at is that in the first post-war year of 1946 all domestic, local and international carriers were paid a total of $46,891,000 in mail pay to perform 39,079,000 ton-miles of mail service. In 1951 all of the lines were paid $110,948,000 to perform 86,245,000 ton-miles of mail service. It was too much for you to note the increase in air mail ton-miles, wasn't it?

But what truly concerns us is that in your letter (and your book, too) you seem to feel—you don't come right out, but you strongly imply—that the airlines should carry the mail *free*. In your third paragraph you refer to the $41 million and the $171 million as *mail subsidy payments*. No part of this is cost for doing the job, Mr. Bolles? Have you any idea what 86,000,000 *ton-miles* means? Do you know about mail priority on all flights, the scheduling of trips to fit Post Office requirements, the penalties for missing flights and stops?

And did you mention that the domestic trunk airlines in 1951 paid to the Federal Government in the form of income taxes $20 million *more* than they received in pay for carrying the mail?

5. Let's go a step further, Mr. Bolles. The government (and the public) has bought a bargain in scheduled air transport. A real bargain. During 1946 the airlines had an average of 516 aircraft, capable of moving 1.2 billion ton-miles annually. In 1951 the industry had 1,267 aircraft, capable of moving 2.1 billion ton-miles annually. The money to buy those airplanes—something in the neighborhood of $600 million—came from private investors. These are the same investors which you, Mr. Bolles, would apparently prefer to see wiped out by reckless, uncontrolled and disastrously uneconomic competition.

Now, Mr. Bolles, if you had taken just a little time to dig up the facts, you would have known that the military heads of this nation depend upon this scheduled commercial airline fleet for wartime emergency. This fleet is greater than the military transport fleet. The Secretary of Commerce and the Secretary of Defense have worked out a plan, with the cooperation of the air carriers, for the assigning of approximately 300 four-engine aircraft for immediate military service if and when the need arises. On forty-eight-hour notice, too. Thus in one stroke the government (and you as a taxpayer) would acquire a fleet of modern transport aircraft conservatively worth $260 million.

If the government had to build and maintain this fleet your tax bill would be just that much higher, Mr. Bolles. The commercial fleet has been built with private money and is earning money in the American economy by carrying millions of passengers and millions of ton-miles of mail, yet it is a vital military auxiliary. It is part of America's private enterprise system at work, or are you listening to another program, Mr. Bolles?

6. Now we can get down to the nub of your thesis, Mr. Bolles—the nonsked policy line you followed so closely. The notion that the public has been damaged by the Board's efforts to regulate the nonskeds is pure and unadulterated poppycock. The nonskeds have contributed nothing to the development of air transportation. That's right, Mr. Bolles, nothing. They have not contributed to the development of more modern aircraft, better operating techniques, better traffic control facilities and procedures, or to any other one of the enormous number of factors which cause air transportation to go forward as a safer and more efficient form of transportation.

Formula for Making Money

The nonskeds sought to make money for themselves, Mr. Bolles, by adopting a transportation technique as old as transportation itself, i. e., restrict yourself to the long-haul, high-volume traffic areas, and operate only when you get a full load, and you can make money from transportation. This practice is one which would deny to all but the largest cities the benefits of air transportation.

Are we to have 600 and more communities on the nation's air transport network, Mr. Bolles, or just a handful of metropolitan areas, from which planes depart only when full? Have you looked into the air transport system, Mr. Bolles? Do you wish to eliminate 500 or 600 cities from the airline network? You must, because that's the only way your argument of permitting nonskeds to operate will work out. You don't understand the most fundamental basic elements of transportation economics.

And speaking of competition, did you inquire into the lease agreements for nonsked equipment, Mr. Bolles? Of course you didn't—despite your claim of being an objective inquirer. If you had done so, your chapter on the airlines would have been in tune

(*Please turn to page 75*)

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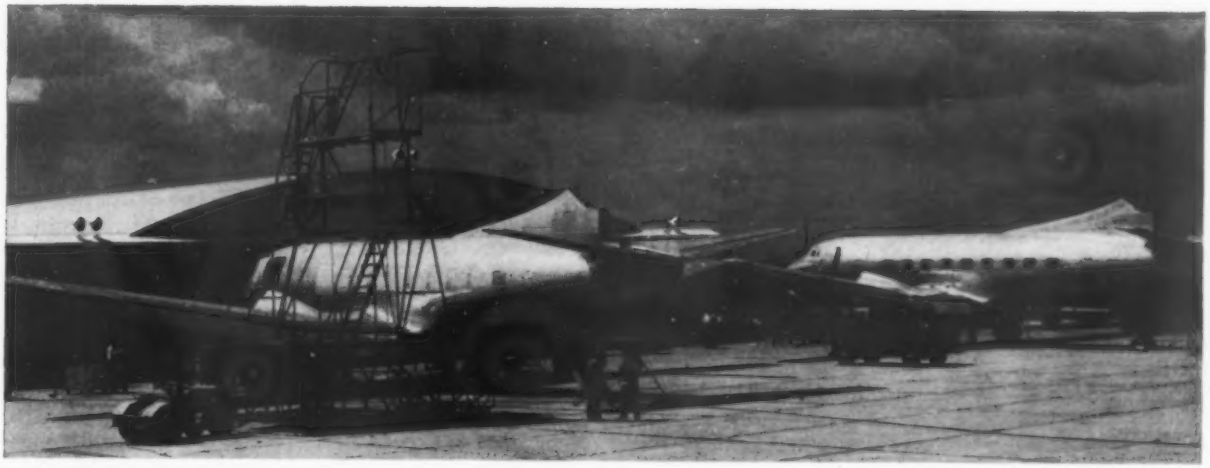


MARTIN 2-0-2's undergoing major overhaul as part of Pioneer's new Pacemas:er fleet at Temco's new base at Greenville, Texas.

Industry Watches Pioneer's Plane Program

Pattern for other Local-Service Operators may be set by results of issues raised.

By William D. Perreault

PIONEER Air Lines has become the focal point of a large portion of the civil aviation industry's interests. Pioneer's purchase of nine Martin 2-0-2's and its order, for 1954 delivery, of five Convair 340's, has set the stage for the first attempt by a local-service airline to introduce postwar equipment. Interest centers on:

- **Competitive effect** likely on trunk lines if feeders start operating comparable aircraft, and route modifications which might be required to justify this type of equipment.
- **Economic wisdom** of operating large twin-engine aircraft on short-haul routes, a point which has been the center of the small-airlines dilemma since their founding.
- **Question of whether CAB** will support, even temporarily, new equipment purchases of local-service airlines by higher mail pay.
- **Possible swing** to new equipment which a successful attempt by Pioneer might precipitate.

One of these questions is in the process of being answered now. Late last month, in CAB's prehearing conference on a mail rate case in which Pioneer is seeking higher mail pay, CAB Bureau of Air Operations Counsel Allen C. Lande said that, to the extent that new equipment will require higher revenues, that difference should not be underwritten with mail pay.

Economic Question

Lande pointed out that this is not final. CAB is not opposed to Pioneer's decision to use Martins and Convairs, but on the basis of data submitted at that time, use of equipment larger than DC-3's does not appear economical from a mail-pay standpoint.

At press time, Pioneer was busy documenting its case for the new aircraft and the wisdom of higher rates. Core of the mail-rate request appeared to be that the DC-3 operation would never become self-sufficient, and would require higher and higher mail pay to off-set rising costs. Pioneer president Robert Smith is confident that within three year's time the Martins would assure lower mail rates than would the DC-3's, and that within six years it would be possible to operate with a compensatory mail rate. Further, Smith noted that, even operating Martin 2-0-2's, Pioneer's mail rate would be below that of some of the local-service airlines. For the year ending June, 1951, Pioneer's rate was virtually half that of a number of other operators.

Meanwhile Pioneer was moving along with plans to put the Martin 2-0-2's, which it will refer to as Pacemasters, into service early in June. Delivery of the first aircraft from Temco Aircraft Corp. is scheduled for May 9. By June 6 five aircraft will be available to start operations. Three will be used on schedule, one for training, and one standby. Delivery of the ninth aircraft has been promised by July 3, with some indication that this estimate might be beaten.

When delivered to Pioneer the Pacemasters will be like new aircraft. Actually none of the nine aircraft have yet reached 7,000 hours total operating time. Under the terms of a half-million dollar contract, Temco is giving the fleet 7,000 hour overhauls. Over and above

the requirements of this overhaul, all the mandatory inspection and modification bulletins are being completed, radio equipment modified and interiors completely refinished.

Fuselage tops are being painted white, the belly left natural aluminum, a white buffalo contrasts with the blue of the vertical stabilizer and rudder, nacelles are blue, and prop tips are red, white, and blue.

Pioneer is taking out the automatic pilots, and will disconnect the reversible-prop circuits for the time being, until the current discussions regarding prop-reversing circuits are completed. Among the mandatory changes undertaken is a rework of the landing gear signal system to provide a more positive signal of unlocked gears; a splitting of the thermal deicing heater circuits providing separate controls for each of the four heaters; and a modification of the vertical fin attachment, providing alcohol as well as thermal windshield deicing.

The two major projects in the modification are the reinforcement of the nacelle structure and the installation of anti-detonant systems to provide wet take-off power for the Pacemasters.

Temco's Part

Temco is playing no small part in the Pioneer schedules. During the earlier days of the Martin 2-0-2's, Temco carried on extensive modification of Northwest Airlines' fleet, working under contract with NWA and Martin. Today more than 50 persons with responsible production jobs at Temco's new Greenville, Texas, base, where the work is being performed, have experience with the airplanes. Temco has one of the country's biggest civil overhaul depots, employing 900 people in cycle overhaul of Douglas DC-4's for the military and in similar work. The Pioneer Pacemaster program is a big program, but it is being handled readily by Temco, as evidenced by the delivery schedules.

Temco is handling the 100-hour inspections on the Pratt & Whitney R-2800 engines of the Pacemasters, but engines with over 700 hours are being pulled and sent to Dallas Airmotive for complete overhaul. Instruments are being overhauled by Dallas Aero Service.

The personnel training programs at Pioneer are moving along on schedule. Initial training of check pilots was handled by Frank Kendall of Trans Ocean Airlines. One of Martin's test pilots will handle additional checking. All 76 Pioneer pilots will be checked out. A few of these pilots have been hired on a temporary basis to help during the training program. All vacations have been delayed and similar steps taken to keep DC-3 schedules unaffected by training.

Schooling of pilots, on which Pioneer has placed heavy emphasis, includes 50 hours ground school, 10 hours flight time for captains and five hours for co-pilots, plus tests.

Maintenance training is being carried on night and day, with men getting training on company time. Martin, Northwest, and all the equipment vendors have been called in for specialized training. Northwest provided ground instructors and complete mock-ups of the principal systems.

Traffic Growth

If preparations can assure success, Pioneer's future with the Pacemasters should be prosperous. The realization that it takes passengers, considerably more passengers than Pioneer has ever carried in the past, to make a success of the Pacemaster operation makes the company's traffic growth and related experience of interest.

In 1951 Pioneer operated 42,103,352 revenue passenger-miles. This was up almost 25% over 1950 and is part of a trend which has been consistently upward in strong strides since 1945, when only 1,347,993 revenue passenger-miles were flown. Pioneer is staking its claim for getting on a compensatory mail rate within six years on a traffic-growth rate of 12% per year. This is modest in comparison with actual gains in recent years.

The fact is, despite load factors which might indicate the airline was operating with some empty seats most of the time, Pioneer is turning away passengers where it hurts. In the first 14 days of April, for instance, Pioneer had to "wait list" 908 passengers; this means 908 passengers who wanted connections on Pioneer could not be accommodated.

Part of this relates to Pioneer's specific operation. About 25% of the company's operations are under IFR conditions, at which time the plane is weight-limited to 18 passengers. At the main traffic-generating points, Ft. Worth, Dallas, and Houston, passengers are consistently turned away. In August, 1951, Pioneer operated 115 flights between Ft. Worth and Abilene with 20 or more passengers on board, 47 trips between Dallas and Waco with more than 20 passengers each flight.

Pioneer's load factor for all of 1951 was 51.14%. In October of that year it was 55.13%. With larger aircraft to permit loading passengers at the high traffic-generating points, Pioneer is confident it can carry the 16 revenue passengers per plane-mile projected for the first year of operation. Going from Lockheed 10A's to DC-3's in August, 1946, when average load was 4.62 passengers, made possible an 11.75-passenger load per plane-mile by August, 1951.

Pioneer is placing considerable emphasis on the effects which new and larger equipment has had on other operators; i.e., average load of Continental went from 10.39 passengers with DC-3's to 22.11 passengers for 10 months of 1951 with Convairs. Pioneer also cites the experience of Western Air Lines, Northeast and Mid-Continent.

The order for five Convairs for 1954 delivery is looked on as "good insurance." For a total down-payment of $150,000, Pioneer has assured itself of having equipment available to meet expanding traffic demand and new routes, if CAB should grant those requested. Price rises have already guaranteed that this investment was made wisely. If traffic demands and route applications make the purchase advisable when a final time for decision is reached, Pioneer thinks it might sell some of its Martin fleet.

Fisher Becomes CAOA Executive Director

Herbert O. Fisher, formerly chief test pilot and sales representative of Curtiss-Wright Corp., has been appointed executive director and secretary of the Corporation Aircraft Owners Association. Fisher, who has been with Curtiss-Wright for 14 years is best known for his flights proving the potential of reversing propellers on multi-engine transports as a means of emergency descent.

Canadair Designs Local-Service Transport

World-wide market survey is planned to determine CL-21 potential; funds asked for two prototypes.

IN A BID to make a permanent place in the commercial transport market, Canadair Limited, Montreal, has designed a twin-engine transport specifically tailored to meet the needs of the local-service airlines. The plane is the CL-21.

First shown to a three-man committee of the local-service airlines during a survey of aircraft manufacturers several months ago, the CL-21 design has since gained considerable momentum:

- **A complete engineering specification** has been authorized and an extensive brochure drawn up and circulated to selected airline officials.
- **Building of a full scale mock-up** and wind tunnel testing of scale models of the CL-21 has been authorized by General Dynamics, formerly Electric Boat Company, parent corporation of Canadair.
- **A world-wide survey** of the market potential for the CL-21 also has been authorized. This is now underway under the direction of Peter Redpath, vice president sales for Canadair.

Decision This Year

Canadair is expected to make a final decision on going ahead with the project before year's end. As soon as the survey is completed the Board of Directors will vote on allocating the funds required to build two prototypes (the second one to assure that an accident to the original would not wipe out the project) and a structural test model.

Canadair has told the airlines that this plane would sell for about $450,000 plus a 15% import tax imposed on Canadian manufactured goods shipped to this country. It is quite possible that this tax would not apply to the Wright engines, Hamilton Standard propellers and other U. S.-built equipment going into the plane. Virtually all equipment would be U. S. built, meaning that, even if duties were involved in the initial purchase, they would not represent recurring costs.

The CL-21 is tailored to meet the ATA's transport specification for the local-service airlines. Grossing about 32,000 pounds, it is powered by two Wright R-1820 C9HE engines rated at 1525 horsepower each. Operating at 60% power during flight at 5,000 feet altitude, the CL-21 cruises at about 220 miles per hour. On short trip segments, common in local-service airline operation, this means a block speed of about 145 miles per hour.

Physically the CL-21 is about the same size as the DC-3 except for being several feet longer and having greater cabin width of 112-inch maximum diameted. But the high-wing design and tricycle landing gear prominently mark the plane as a completely new aircraft. Four-abreast seating is provided along the cabin length. Cabin pressurization (sea level pressure up to 5,000 feet altitude), integral loading ramp for passengers and provisions for carry-on baggage are among the other provisions aimed at local-service airline operations.

Operationally the aircraft is also said to be well suited to this type of use. Designed to operate from 3500-foot runways, the CL-21 would be equipped with reversible propellers, an anti-skid device on the wheel brakes, and flaps providing stall speeds below 75 miles per hour. The design is the work of W. K. Ebel, vice president of Canadair's engineering activities, and his staff, including E. B. Schaffer and R. D. Richmond. Ebel was prominent in The Glenn L. Martin Company's postwar transport designs.

Direct operating costs will range from 50 cents per plane-mile on 400-mile segments to 70 cents per plane-mile for 65-mile segments, including depreciation. Of the 70 cents about 20 cents is represented in depreciation costs.

These costs would be comparable to DC-3 experience but the plane, with its higher speed and extra seats, would improve the CL-21's potential. Seat-mile cost would be about two cents on 65-mile segments and range downward to 1.61 cents at 275 miles.

Lower labor costs in Canada are expected to improve Canadair's ability to sell a new type aircraft at a price within the means of the local-service airlines. Some discussion has also been given to selling the planes minus interior decorations so each line could finish interiors to suit its own needs and pocket book.

Indications are it would take about one year to have a prototype flying.

UAL May Buy 20 DC-7's; Engine Change Likely

United Air Lines is negotiating with Douglas Aircraft Company for the purchase of 20 DC-7's. Pratt & Whitney R-4360 engines may be substituted for the Wright R-3350 Turbo-Compound engines in the UAL versions.

Although both engines have the same horsepower rating, maintenance problems might be simplified by using the R-4360, which United employs in its Boeing Stratocruisers. The Pratt & Whitney installation would add 1,800 pounds to the DC-7 weight. UAL is studying the relative merits of the two engines in the DC-7 now.

United is the fourth airline to order the DC-7 transports. American Airlines has 25 on order, with National Airlines and Delta Air Lines having ordered four each.

Gyrodyne Company of America is about to start CAA certification tests on its new, six- or seven-place coaxial helicopter.

WING-TIP FILTER boxes containing ion chamber devices, a type of geiger counter, are checked on T-33 jet at Indian Springs AFB, Nevada, to discover how much radiation has been absorbed during cloud-sampling tests.

A-Bomb Test: Tense, Terrifying, Terrible

New bomb has tremendous power, although larger than practical for battlefield use.

By WAYNE W. PARRISH

THEY TOLD US the flash would be as bright as a *hundred* suns and the blast as powerful as that of 25,000 *tons* of TNT.

Driving out to the atomic proving grounds northwest of Las Vegas on that clear cloudless morning of April 22, all this seemed a little incredible. The barren mountains were peaceful against the deep blue sky. Yucca plants and Joshua trees and other desert growth covered the broad valleys with a dull grey-green. There was little traffic on the highway. It was a strange prelude to the detonation of the largest atom bomb tested so far in the continental United States.

I was in bus No. 6 in the caravan of a dozen buses carrying several hundred press, radio, TV, and civil defense representatives. I was the only representative of the aviation press. On the two-hour drive that morning I had no feeling of going anywhere special, except for the conversation. Two newspaper veterans of earlier detonations—neither of whom had been as close as we were to be that morning—were talking about the tremendous emotional experience of observing a test. Each had experienced insomnia and a lack of interest in food for several days.

What is an A-bomb test like? Neither of those veterans seemed able to describe it. "It's just different from anything else," one said. "It's just entirely different."

So here we were on that Tuesday morning arriving at the first security check point at Camp Mercury, the AEC camp about 20 miles short of the proving grounds. A security officer boarded each bus and checked and re-checked, as had been done numerous times before. Then we rolled on, through the second security check, and over the mountain ridge into the proving area. There are mountains on four sides and the entire proving area is perhaps thirty miles in depth.

Purposeful Parade

The long line of army vehicles carrying the troops from Desert Rock had moved into line in front of our buses and it was then that we had a feeling that this long silent parade was going someplace with a purpose.

By the time we had piled out of our buses and gathered at the foot of a 100-foot-high hill of rocks called News Nob, it was one hour and three quarters before H-hour. Already 1.2 tons of TNT had been detonated near the target zone as a preliminary test of instruments and the explosive cloud was rising in the distance.

The foot of News Nob bustled with activity. TV, newsreel, and news photographers were getting set up. The Signal Corps communication vans were all set to transmit news copy. All manner of power and communication lines were reaching here and there around the area. A hundred chairs were lined up for civil observers and a dozen big tables were soon taken over by newsmen and typewriters, and some of the reporters began typing. Coffee and rolls were available from an Army van. Dark goggles which dim the sun to the light volume of a moon were distributed.

The sun was bright and only a few scattered clouds down on the horizon marred an otherwise spotless sky. Nearby was the dry salt lake known as Frenchman's Flat, which had been the target for previous detonations. Ahead of us across the valley was Yucca Basin. Four 300-foot towers, one to be used in today's tests, were ten or more miles in the distance. We couldn't see today's target, a big "X" painted on the desert floor, but we knew just where it was by other identifying marks. The troops were in foxholes from four to six miles from the target.

At H minus one hour another ton of TNT was detonated near the target area to test AEC instruments. We could see the smoke but the sound was barely audible. And then came more and

more announcements over the loud speakers as the time approached.

Overhead were B-36's as high as 38,000 feet. Then came the three B-50's taking actual part in the test, one with the bomb itself, the other two with test instruments. They were flying very high and only the vapor trails showed up clearly against the dark blue sky.

Everybody at News Nob was getting set. We were warned to be braced against something because the shock wave might be strong enough to knock a person flat. There were constant warnings about using the goggles to avoid permanent eye injury. I climbed up the rock hill at H minus 30 minutes and found myself a ledge about a hundred feet over the desert floor in perfect view of the entire target area.

Tension Grows

From here on the announcements were made from the AEC control rooms a half mile away. The time announcements began to be ominous. Tenseness started to prevail. There was less conversation, less moving about. It was now a matter of waiting and five minutes stretched out like an hour. I tried on my goggles. I rehearsed to myself all of the instructions. I braced myself against a big rock behind me.

At H minus 15 minutes the announcements came in steady order, describing the movement of the airplane far overhead, reporting the upper-level temperature and giving out other pertinent information.

At H minus 10 minutes a siren wailed. Ten minutes! It was too late now to escape. Too late to change positions. High overhead at 30,000 feet were the vapor trails. Out on the desert some four or five miles between News Nob and the target were the Army trucks and somewhere in trenches were the troops. No activity was visible. The loudspeakers warned again about the use of goggles and warned against looking through binoculars, telescopes and camera sights.

At H minus 5 minutes the loudspeakers reported the position of the drop plane. It was on its bomb run at 30,000 feet. Just 42 seconds after releasing the bomb the detonation would occur at 3,000 to 3,500 feet over the target. The shock wave would hit us some 20 seconds later. We just waited as the seconds ticked by. Only the loudspeaker and the droning of planes overhead broke the desert silence.

At H hour minus 1 minute the loudspeaker sounded truly ominous. Goggles were ordered on. And there I sat in complete darkness waiting for "Bombs away." I could have looked at the sun, pale as it was through the glasses, but I wanted to be looking toward the target. Then came the 30-second announcement. I must confess that my heart was pounding something fierce. I tried to calm down but the circumstances wouldn't permit. The build-up toward H hour had been terrific and inescapable. Judging from the silence, except for the loudspeaker, I was sure everybody else was just as tense.

The loudspeaker was silent from thirty seconds to twenty seconds. It seemed like a year. Then at 10 seconds, the loudspeaker began announcing each second. Then came "Bombs away." I had no way of knowing whether the detonation came 42 seconds later, because I couldn't see my watch, but after what seemed ages there came into my direct focus the explosion of the A-bomb. It was a white ball, brilliant even through those dark glasses, and quickly it became a fiery, turbulent ball expanding rapidly.

There were shouts from our crowd. There were the kind of expressions one makes when one sees something tremendous. I tried to remember the instructions while trying to take in the sight at the same time. Count 1001, 1002, 1003—and then remove the goggles. I did this, and before me was the fireball, that terrifying but beautiful ball of red fire. I put my goggles beside me and put on my regular glasses and my sun glasses.

The shock wave hit with a sharp report. I felt it—and my ears reacted, too. It wasn't as strong as I had expected, but it did have real power behind it. There was a subsequent rumble as the shock waves bounced around the nearby mountains.

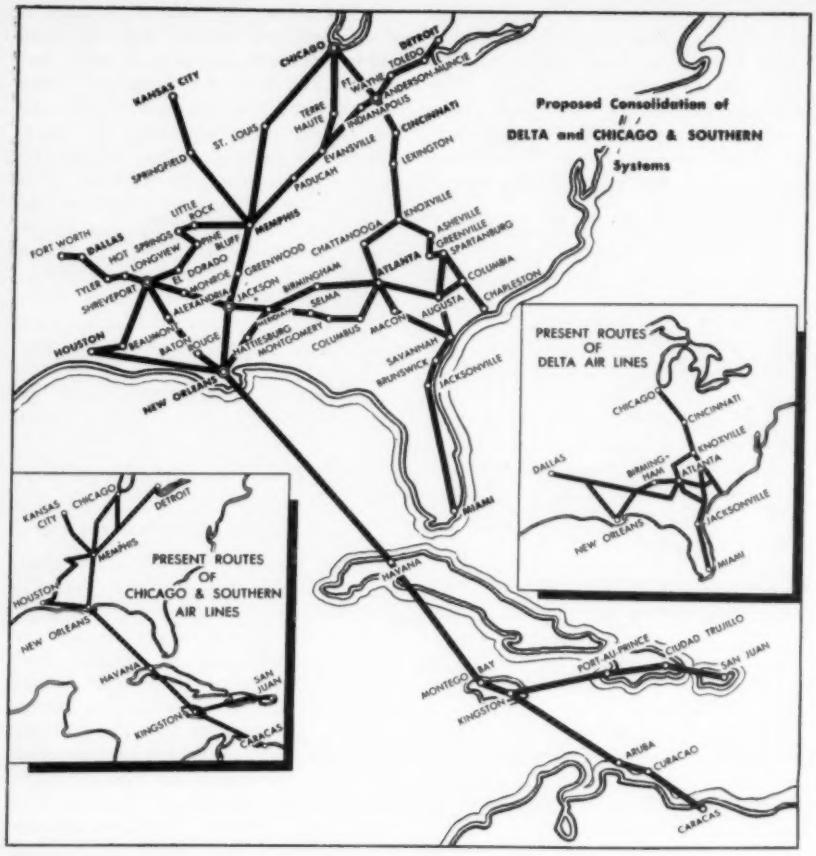
Meantime the fireball became a mushroom very rapidly, and the cloud swirled and expanded with great turbulence and became a thing of massive beauty. Orange mixed with brown, and rust colors prevailed along the white against the deep blue sky. A huge upward suction soon appeared in place of the stem of the mushroom as the entire mass moved swiftly upward. In five minutes the cloud mass was at 35,000 feet but it looked to me as though it were about 4,000 feet above.

I divided my attention between the atom cloud and the ground, wondering how the troops were. The target area became a wall of radioactive dust rising up several thousand feet and it remained there for a long time until the wind moved it away and gradually dissipated it.

Good Demonstration

An hour after the blast the troops in the foxholes began moving, but they couldn't go through the radioactive target area. Several helicopters flew out to the troop area. In another hour some troops were parachuted behind the target. It was a good tactical demonstration and proved that the A-bomb is a tactical as well as a strategic weapon, although the bomb we saw detonated was considerably larger than practical for tactical purposes. The demonstration proved how close troops and civilians could be without incurring injury, although if a bomb of this size had been detonated over a city the destruction would have been tremendous over a wide area from blast, fire, and radioactivity.

AFTER EACH FLIGHT through radioactive cloud formations, certain cloud-sampling aircraft are rid of radioactive particles adhering to skin surfaces with a mixture of Gunk, a grease solvent and water, in order to reduce possible hazards from the radiation.



Delta and C&S to Form One Company

Stock interchange prelude to proposed merger now before CAB; bid in for Capital's Routes 51 and 55.

By William V. Henzey

THE DOMESTIC airline industry's drive for permanent self-sufficiency was given added impetus recently when Delta Air Lines and Chicago & Southern Air Lines, predominant in the north-south air market, agreed to combine their systems into a single company to be known as Delta-C&S Air Lines.

Delta Would Survive

Deal calls for the exchange of $10,000,000 of Delta 5½% debentures for the 509,326 shares of C&S stock outstanding. Debentures are convertible into Delta shares at one share for each $35 face value of the debentures.

Delta would be the surviving corporation to which C&S would transfer its certificates for 2,820 miles of domestic routes and 3,034 miles of Latin American routes. These would be joined with Delta's 3,654-mile domestic network. Total population of 30,000,000 people would be served by the new system.

Merged company would have Carleton Putnam, founder of C&S, as board chairman, C. E. Woolman, founder of Delta, as president and general manager, and Sidney A. Stewart, current C&S president, as executive vice president. Delta's main offices are at Atlanta; C&S's at Memphis.

Equipment-wise Delta has seven Douglas DC-6's, six DC-4's, 17 DC-3's and three C-47's. On order are four DC-7's and 10 Convair 340's. C&S operates six Lockheed Constellations and 12 DC-3's and also has 10 Convair 340's on order.

Under CAB's administrative separation of subsidy and service mail pay, both Delta and C&S are classified as "Group II" carriers. Delta is currently on a non-subsidy rate of 53c per mail ton-mile. C&S is on a sliding-scale rate formula designed to produce an estimated $1,045,000 annual mail pay of which $382,000 is service pay and $663,000 subsidy, according to CAB.

But the combined system contemplated by the two carriers could well fit into the Group I classification of carriers set up by CAB and now occupied only by the "Big Four." Non-subsidy rate for this group is 45c per mail ton-mile.

Agreement to merge is now in preliminary form but has been approved by directors of the two lines. It has been submitted to CAB for approval. Soon a definitive agreement will be drawn up, filed with CAB and submitted to stockholders for approval.

Merger plan is the fourth involving domestic trunk carriers since last December and is the fifth voluntary proposal awaiting CAB approval. Other trunks committed to merge are Capital-Northwest, Delta-Northeast, National-Colonial and Braniff-Mid-Continent.

Delta, Too

Delta is also actively in the market for Capital Airlines' Routes 51 and 55 which it seeks to provide a connecting link between its system and that of Northeast Airlines. Both the Capital route issue and the Northeast merger plan are now involved in CAB's complex New England-Southern States Merger Investigation.

Within an hour after Delta and C&S filed application with CAB for approval of their merger, the two carriers appeared before CAB Examiner Edward T. Stodola, conducting a conference in the New England case, asking to be considered along with Northeast as a possible joint transferee for Capital's Routes 51 and 55.

In previous legal maneuvers in the New England case, Delta individually and jointly with Northeast, and C&S individually applied for and were given the status of possible recipients of the controversial Capital routes, if and when it is determined Capital will part with the routes. By CAB order, National is also in the running.

But after closing their merger pact, Delta and C&S stated their "primary position" with respect to Routes 51 and 55 as in support of transfer to a Northeast-Delta-C&S combine.

Such a system would create a powerful eastern carrier with access to such points as Boston, New York, Detroit, Cincinnati, Chicago and St. Louis, in the north, Atlanta, Miami, New Orleans, Houston, Memphis, Dallas in the south, and Havana, Kingston, Caracas and other points in the Caribbean area. The Latin American points would be serviceable through the New Orleans and Houston gateways, but not Miami.

But with Capital reluctant to part with Routes 51 and 55 "at this time" and the Northeast merger hinging on Delta's success in acquiring a connecting link, most immediate possibility for Delta is the "clean" or "straight" merger with C&S.

Colonial-National Merger Defeated

Charges and counter-charges keynoted noisy stockholders meeting which led to final decision.

THE BITTER stockholders' battle for control of Colonial Airlines has ended in a victory for management's slate of directors, but a defeat for management's proposal to sell the company's assets to National Airlines.

After a heated annual meeting in Wilmington, Del., following which more than two weeks were required to count votes and proxies, the NAL merger vote was short of the required 51% of the 515,600 outstanding shares needed to okay the deal. The result:

For	**246,770**
Against	**180,430**

Management's slate of directors, needing a majority of the quorum of 406,705⅗, was re-elected as follows:

For	**239,249**
Against	**185,211**

Management was opposed by an Independent Stockholders Committee, which nominated its own slate of directors and which favored a sale of assets to Eastern Air Lines instead of NAL. A similar sale was also favored by Sigmund Janas, Sr., former Colonial president, and holder of 30,000 Colonial shares.

Colonial directors re-elected were Branch T. Dykes, president, Edmond M. Hanrahan, John J. Murphy, A. Charles Schwartz, and Joseph V. Shields.

Dykes received 239,704⅗ votes, with Hanrahan, Murphy, Schwartz and Shields getting 239,249-1/10 each. Voting for the Independent Committee's directors was: J. H. Steinman, 185,011½; Aaron Schwartz, M. L. Sindeband and C. A. Brassert, 185,211½ each, and Victor Onet, 184,956. Total vote was 425,714, out of 515,600 shares.

What management's course of action will be as a result of the turn-down of the NAL proposal is not known at this time. Colonial's position had been that CAB would probably approve an NAL deal "without too great delay" but that EAL-Colonial proceedings "would be long-drawn-out and would probably terminate in disapproval."

Agreement with NAL was on the basis of seven NAL shares for eight Colonial. EAL's offer was one EAL share for two Colonial.

During the two weeks needed to count the votes, the Independent Committee, headed by T. Peter Ansberry, went to court several times and was successful in securing an order restraining Colonial from proceeding with the NAL deal (if the vote was favorable) pending a hearing on a preliminary injunction. The restraining order was obtained on the basis of the committee's claims that Colonial had made misleading statements in soliciting proxies.

In other legal steps, the committee was unsuccessful in attempts to block the election judges from certifying the results of the election, and to cut off the voting as of 6 p.m. April 16 (date of the opening of the stockholders' meeting), rather than 11 a.m. April 24, the time named by the judges.

The April 16 meeting, attended by over 100 persons, including Janas, A. M. Hudson, former vice president, and Brig. Gen. John F. Egan, proposed for president by the Independent Committee, was one of the most heated and noisiest on record. It was marked by frequent clashes, by bursts of applause from supporters of the committee, by several people talking at the same time, and by several motions being on the floor at the same time.

There was bitter discussion over allegations made by Janas in early April that A. C. Schwartz, Colonial director, had received $20,000 from a "source connected with the National proposal." Schwartz has branded the charges as "completely false" and the statement was made at the meeting that Schwartz had drawn the money from his personal account to pay a debt.

M. S. Gordon, an attorney for the Independent Committee, asserted that he had correspondence showing that Schwartz had "raised some money" rather than drawing it from his account, that his debt was $61,400 and that the note for that amount was compromised for $20,000 at Schwartz's request. The name of the person to whom Schwartz allegedly owed the money was not revealed at the meeting.

Capital-Northwest Merger Proxies in Mail

Capital Airlines and Northwest Airlines have mailed proxy statements to their stockholders on the merger of the two companies. Proposal will be voted on by stockholders of both companies at meetings on May 19. Approval requires affirmative vote of two-thirds of outstanding capital stock of each company.

ATA Designs Low-Cost Omnirange

Most expensive item is $1400 slot-type antenna; extra land not necessary for the installation.

A LOW-COST aid to facilitate instrument let-downs and for use as a short range navigational aid has been designed by the Air Navigation and Traffic Control Division of the Air Transport Association and successfully tested. Operating continuously since February 9 at Baltimore's Friendship International Airport, the airline terminal omnidirectional radio range has proved "more accurate and more stable than previous VOR's of any type known to ATA personnel."

Costing an estimated $5,000-$7,500 per installation, complete, the TVOR unit is the ATA's answer to the expressed need of the local-service airlines for a low cost let-down aid for installation at some 200 airline stops now being served without any type let-down aid and the 200-300 additional stops slated for service in the near future.

Design Simplicity

In theory, the job of providing these aids is CAA's. In fact, it was apparent that CAA does not have the funds to establish, maintain or operate the additional required aids. A typical omnirange installation costs about $90,000 installed and continuing costs are high. With this in mind ATA directed its ANTC group to design a low cost unit which would serve this purpose.

Results of this program, which took 63-man-days labor plus the personal overtime put in the project by those concerned, is best expressed by the end results as measured at the Baltimore site:

Maximum Station Error, based on ground checks—plus 1 degree, minus .7 degrees.

Maximum Station Error, flight checked for elevation angles of 3 degrees to 12 degrees—plus or minus 0.9 degrees.

Station Range—Flying at 1500 feet altitude, 45 miles. Related to radio line of sight at higher altitudes.

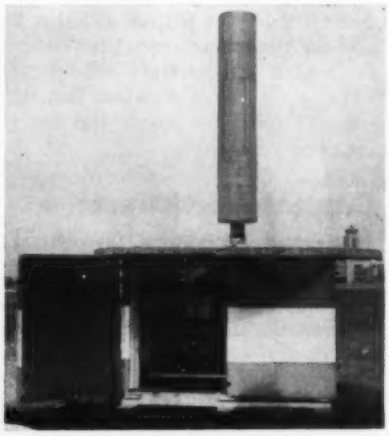
"Over" indication — Excellent. An EAL flight passing over the station at 14,000 feet reported the change from "to" to "from" required less than 5 seconds.

An equally important aspect of the work was to convince electronic equipment manufacturers of the potential market for this type equipment. This has been accomplished. Collins Radio is reported developing a terminal VOR as a package unit for sale to the airlines, Wilcox Radio is working out plans for a similar packaged unit and Federal has made arrangements to provide the airlines with the specialized components of VOR required for use with their own equipment in assembling this type TVOR.

Design simplicity which will permit airline personnel not specially trained in VOR operation and maintenance to assemble, adjust and maintain the equipment was one of the important characteristics built into the ATA unit. The special slot-type antenna, costing $1400, is the most expensive component of the Airline TVOR and was selected primarily for this simplicity of installation and adjustment.

By minimizing the siting difficulty the slot-type antenna design reduces the installation costs appreciably. It is anticipated that the unit will generally be installed on the surface of the airport eliminating the need for buying up land, and making it unnecessary to purchase access roads, relocate local objects affecting the radiation pattern, etc.

Monitoring has been accomplished by a 38-tube, $4500 Hoffman monitor but Wilcox Electric is now building a simplified monitor of 9 tube construction which will cost about $550. Monitor design is critical since, if the large standard Hoffman unit were used, it would be the most complicated unit in the system and consequently the one most subject to trouble, rendering the system inoperative.



ATA Terminal VHF Omnirange.

Three Cargo Carriers Ask for Mail Loads

Slick Airways, Flying Tiger Line and U. S. Airlines, certificated all-cargo carriers, last week applied to the Civil Aeronautics Board for permission to carry air mail, air parcel post and air express at rates based on the actual cost of rendering the service.

Officials of the lines estimated they could carry air mail and air parcel post at rates about half of the 45c subsidy-free rate now paid the "Big Four" airlines. They also felt that air express, now transported solely by the passenger-cargo-mail carriers, could be carried in all-cargo aircraft at rates in the 20-25c per ton-mile bracket. Air express rates now average around 60c a ton-mile.

On the mail question, which the carriers said has been discussed with Post Office officials, a new mail rate classification is advocated for operators of all-cargo planes. This would, in addition to the all-cargo lines, apply to combination carriers such as the "Big Four" for mail transported in all-cargo aircraft.

Opposition Expected

Substantial amount of additional capacity for the Post Office and Railway Express Agency and "savings of millions of dollars to the Post Office and the public" would result from the authorizations, the lines said.

The three carriers were certificated in 1949 for strict cargo services, a request to transport express being denied. Their current certificates expire August 12, 1954, but applications have been or will be filed for permanent renewals.

The carriers voiced no opposition to subsidy payments to certificated carriers or to continuance of the 45c non-subsidy rate of the "Big Four" when limited to combination passenger-cargo-mail aircraft. But they said the 45c rate was based on calculations "entirely concerned with combination plane operations" and that the costs of strict cargo operations are much less.

The cargo lines expect great volumes of air parcel post and small-package express business if CAB approves their applications. CAB would set the mail rates but express rates would have to be worked out between the carriers and REA.

Opposition is almost certain to come from the combination carriers which, faced with sharply rising costs, would not only be forced in some cases to take a cut in mail rates, but would also suffer loss of mail and express business to the cargo lines.

When they "set down" at Grand Rapids...

● Furniture and flying are two big things at Grand Rapids, Mich. This town is the famous furniture center of the U. S. and the site of many another healthy industry. Handling over 50,000 passengers a year, Grand Rapids' Kent County Airport is one of the Midwest's busiest. More than 100 private plane owners call it home base. Now, when flying businessmen and others "set down" at this well-equipped field, they're sitting pretty on several counts—including the availability of high quality Standard Oil Aviation products.

Northern Air Service operating at the field features Standard Aviation products. "We've been selling Standard Aviation Gasoline since 1942 because we believe it is the best and our customers depend on it," says manager O. C. Hall. This modern airport has mobile refueling units, rent-a-car service and complete repair facilities. Hundreds of airports throughout the Midwest display Standard's famous Torch and Oval, the flier's assurance of dependability and uniformity.

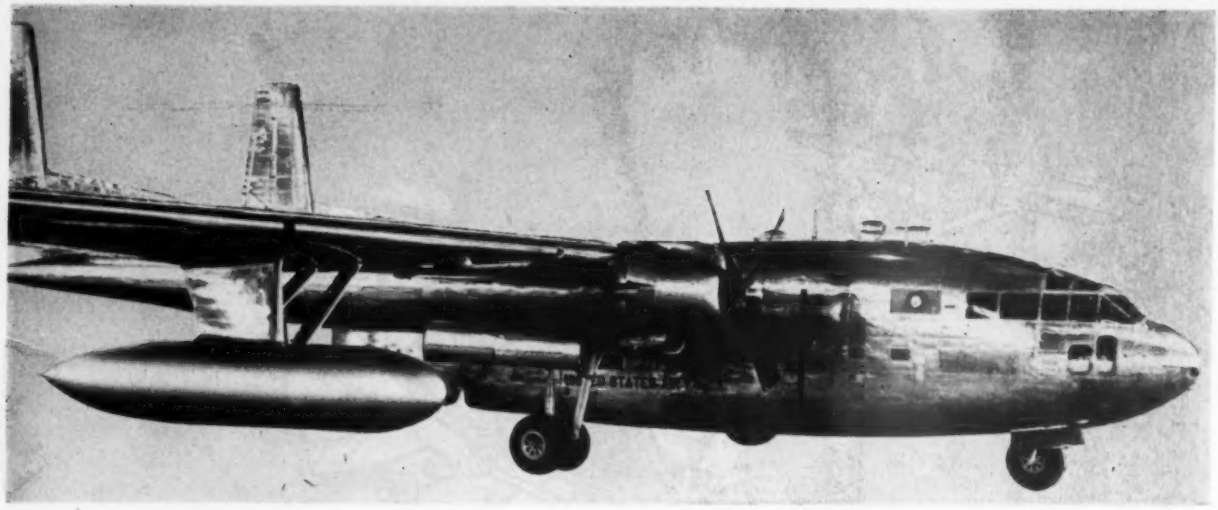
STANDARD

STANDARD SKYWAY SERVICE

Everywhere in the Midwest

STANDARD Aviation Gasolines • STANDARD Aviation Engine Oils • STANDARD Aviation Lubricants and Hydraulic Oils • QUAKER STATE Aero Engine Oils

STANDARD OIL COMPANY (INDIANA)



LATEST VIEW of the new Fairchild cargo carrier.

Fairchild C-119H Makes Debut This Month

New cargo plane can carry 20,000 lbs. more than predecessor; stalling speed is a low 91.1 mph.

By James J. Haggerty

A BRAND NEW cargo airplane, which has commercial possibilities as well as a military application, will make its flight debut this month. The plane is the Fairchild C-119H, a new version of the familiar "Flying Boxcar." Although it still carries the basic numerical designation of its predecessors, the "H" is a completely different airplane—with bigger wings and fuselage, new engines, greater payload, longer range, better stability and control.

Nonskeds Interested

The "H" already has aroused interest in the commercial air transport field. A number of non-scheduled airlines, interested in a future replacement for the aging and controversial C-46, and even the DC-4, have contacted Fairchild Aircraft Division seeking information as to the commercial potential of the new Packet. At least two scheduled airlines have also expressed interest. In addition, the Australian and Indian governments are taking a look at the plane. In both the latter cases, the planes would probably be bought for military use first, but with an eye to its post-emergency commercial potential. The Australian government, for instance, is interested in using it for air shipment of butchered cattle from the ranches to the markets, an assignment now being handled by Bristol Freighters.

As is the case with any plane developed under military contract, delivery priorities of the "H" will have to go to the Air Force. But Fairchild, now strictly a military producer as far as its airframe division is concerned, is interested in developing a future commercial market, and the "H" might be its door-opener. The company as yet has no idea what the plane would sell for in a commercial market. Price of the current production models of the C-119 is between $600,000 and $700,000; the larger C-119H, presumably, would cost more. Some of the additional cost could be offset by elimination of a lot of the complicated extra gear required for military operations.

The "H" is a unique design in a number of respects. For perhaps the first time in development of a military aircraft, engineers were assigned the task of making an airplane slower rather than faster. In paradrop operations, for which the C-119 is primarily designed, a low drop speed is more important than a high cruising speed. Thus, on a typical 900-mile-radius mission, the new "H" will take an hour and a half longer to complete the round trip than its predecessor, the C-119C, requires. In addition, service ceiling will be reduced from 23,450 feet to 21,000 feet. But in exchange for these relatively unimportant factors, the "H" will achieve an extremely low stalling speed of 91.1 miles per hour, compared with 103.2 miles per hour in the "C" model. It will also be able to take off some 20,000 pounds heavier than its predecessor and it will require only 14,600 pounds of fuel for the mission, where the "C" would need 15,700 pounds. A great reduction in take-off and landing distances is also provided.

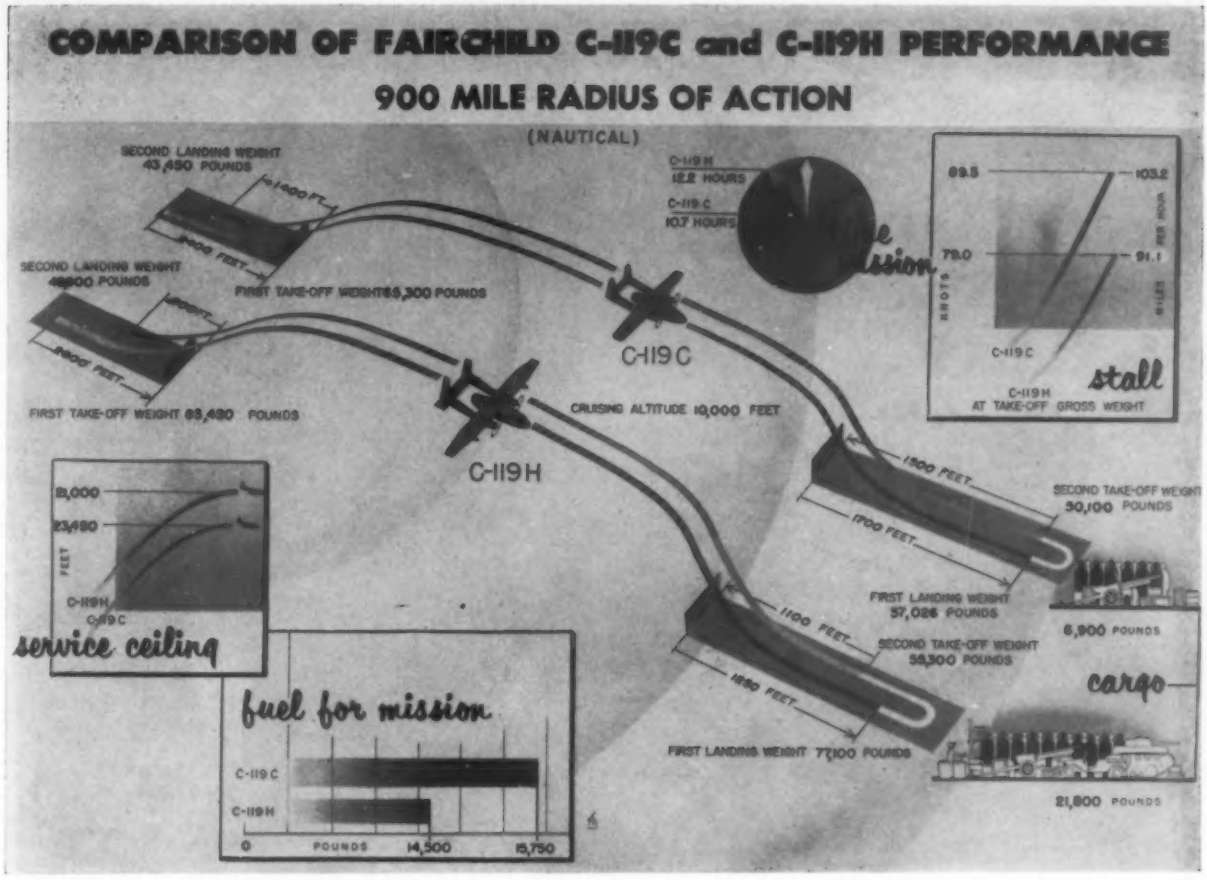
The combined increased gross weight and lower fuel weight poundage obviously offer a tremendous increase in payload, the prime attraction to commercial operators. The "H" will be able to carry a 22,000 pound payload on a 1,000-mile-radius mission, quite a load for a twin-engine plane.

Major reason for the lower fuel consumption and the greater payload is a completely redesigned wing with a greatly changed aspect ratio. The "H" wing will have 40% more area than the wing on the current production models. Span has been increased from 109 feet to 148 feet. Tail area and span have been similarly increased.

Engine Difference

Another contributing factor is use of the new Wright R-3350 Turbo-Compound engines instead of the current Pratt & Whitney R-4360 Wasp Majors, the compounding system, wherein exhaust gases are channeled back to the drive shaft for additional power, providing a considerable decrease in fuel expenditure. The engines in the prototype "H" will develop 3,500 horsepower, but production models will have 3,700 horsepower. Aeroproducts propellers will be substituted for the Hamilton Standards now on the Packets.

Completely external fuel supply, long advocated by safety engineers, is another novel feature of the "H". Internal wing tanks have been completely eliminated and all fuel is carried in two large pods slung beneath the wing outboard of the engines. Fairchild was able



to employ this design feature because the drag produced could be overlooked, cruising speed not being a critical factor. The two external tanks, which are the same size as those being built for the Boeing B-47 jet bomber, carry the same amount of fuel as do the 22 internal tanks in the C-119C.

External Fuel Advantages

The advantages of external fuel are several. From the safety standpoint, they include:

- **Fifty per cent less** exposed area, minimizing gunfire hazard.
- **Leakage will not seep** through the structure to the power plant or other ignition sources.
- **The tanks will tear off in a crash** and cut fire hazard to a minimum.
- **In-flight fire probability** and extent will be lessened because of isolation, the slipstream, and possible loss of only the tank.

Other advantages of external fuel include a wider CG travel, a decrease of over 800 pounds in weight, simplified maintenance and servicing and a greatly reduced requirement for parts, connections, fittings, etc. Here is a fuel system comparison between the "H" and the "C":

	C-119C	C-119H
Tanks	22	2
"V" boards	312	0
Valves	7	3
Pumps	4	2
Gauges	6	4
Controls	5	3
Interconnects	90	0
Weight	2,442 pounds	1,607 pounds

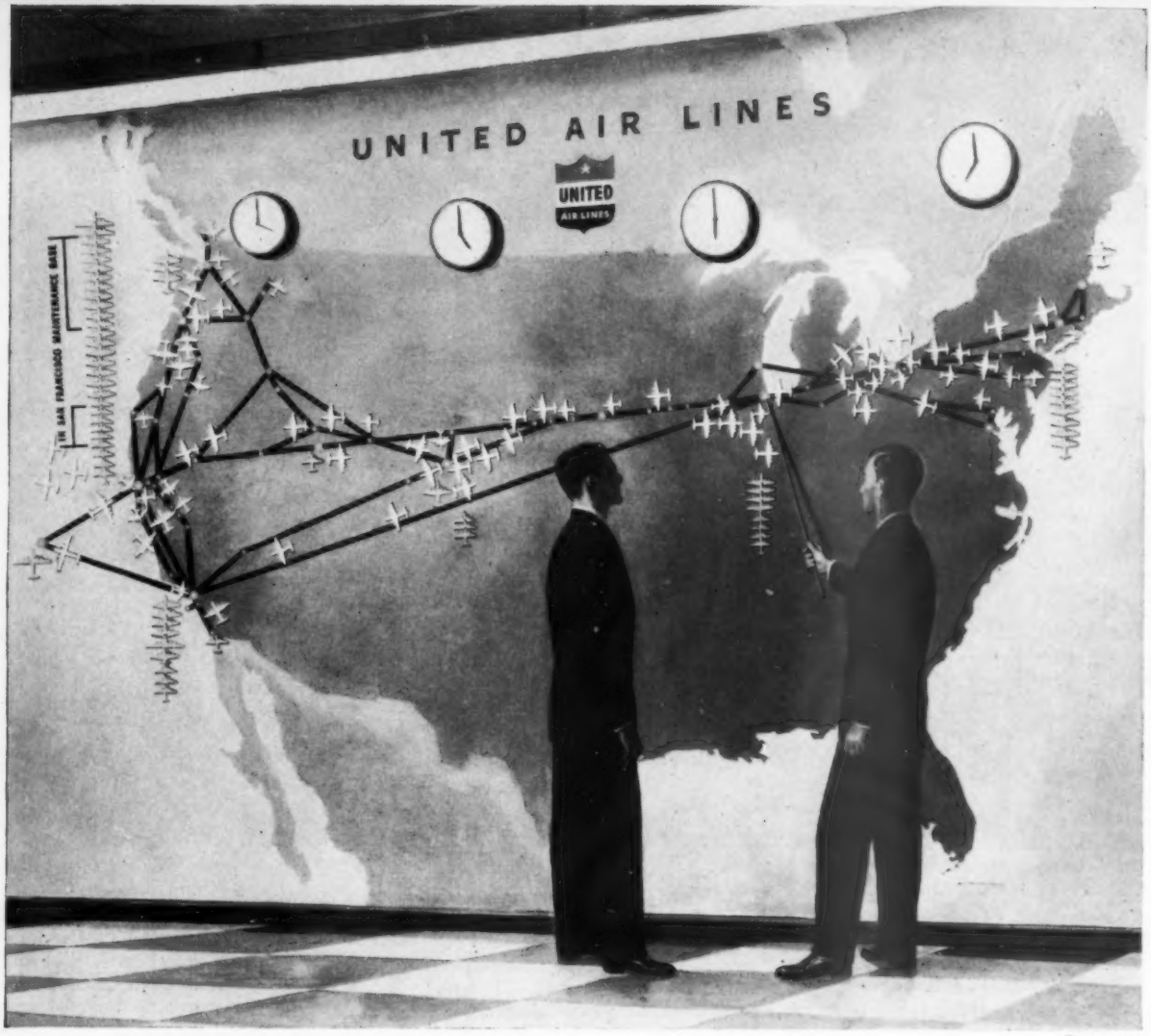
Provisions have also been made for self-sealing on the external tanks. This is accomplished by use of a removable self-sealing blanket, which would be installed only on planes operating in combat areas, so that the large percentage of planes flying in non-combat zones need not be handicapped by the 1,600 pounds of weight imposed by self-sealing provisions for the internal tanks. The blanket straps on to the tank and can be easily installed in the field. When in use, it imposes only a 386-pound weight penalty.

Since in troop carrier operations the C-119H will be called upon to operate from rough, advanced airstrips, a new rough-field landing gear has been incorporated into the "H" design. The main feature of this gear is a universal joint which permits the oleo strut to operate diagonally with the impact rather than vertically against it. Provisions have also been made for addition of an extra small wheel forward of each of the main wheels for better operation off muddy or extremely bumpy fields.

Estimate Nonskeds Owe Over $1 Million Taxes

Six non-scheduled airlines with transportation tax liabilities aggregating over $395,000 as of December 31, 1951, are in a questionable position to meet those liabilities, according to financial reports filed with the Civil Aeronautics Board. Federal officials estimate the non-sked transportation tax bill owed the Bureau of Internal Revenue exceeds $1 million.

Involved is the 15% tax assessed passengers utilizing the non-skeds. Where a liability exists it means that amount has been taken from passengers for tax purposes but not yet paid to the Government. Loose practices between some non-skeds and their ticket agents make it impossible to determine how much is actually owing to the Government.



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LIGHT PLANES represent United Mainliners in the air, **DARK PLANES** Mainliners on the ground awaiting passengers, in reserve, or undergoing daily maintenance.

At 5:59 p.m. on United's Main Line Airway

This is a picture of one minute in a day of United Air Lines—5:59 p.m., Central Standard Time, to be exact. Here you see United's 13,250-mile Main Line Airway in action—the only airline linking the East, the Middle West, all major Pacific Coast cities and Hawaii.

At this moment, over 2000 passengers are aloft in United Air Lines Mainliners, along with about 100,000 pounds of air mail, express, and freight.

Multiplying this scene to span the year 1952, Mainliner travel will amount to nearly 2½ billion passenger-miles—more than enough to pick up every man, woman, and child in Boston, Mass., and carry them all to San Francisco!

The frequency, precision, and regularity with which United Air Lines operates have placed it among the nation's foremost transportation systems. And among the most *economical* too—for Mainliner travel often costs less than first-class rail plus lower berth today! For reservations call or write United or an Authorized Travel Agent.

PASSENGERS • MAIL • EXPRESS • FREIGHT • AIR PARCEL POST

UNITED AIR LINES

ONE OF THE SCHEDULED AIRLINES OF THE U. S.

NEW MUFFLERS presented problem of how to arrange the cross-over from inboard to outboard side so that engine accessibility would not be impaired. Removable cowl covers most of the new installation, and engines are no more difficult to service than normal Merlins.

New Muffler Quiets TCA North Stars

Noise from liquid-cooled Rolls Royce 620's cut 50%; entire fleet to be equipped by early fall.

By Richard Fuller

A TRANS-CANADA Airlines development program to find a way of reducing the pounding roar set up by the four Rolls Royce 620 engines powering TCA's North Star aircraft has paid off in full, the airline feels, by turning up a way to cut engine noise 50%. Result of the program, conducted by TCA's Merlin W. ("Mac") MacLeod, is a cross-over exhaust muffler, which slows down exhaust gases and dumps them over the outboard sides of the nacelles, making the engines seem to purr and permitting easy conversation inside the aircraft.

Trans-Canada says the new mufflers, which have now accumulated more than 400 test hours, bring the North Star airliners into favorable comparison with any major transport flying today.

At a recent press demonstration of the subdued engines, J. T. Dyment, TCA's director of engineering, said that he knew of only one other transport aircraft with a cabin section quieter than the modified North Stars. This plane, he said, is quieter only "in the bar," but he did not mention the Boeing Stratocruiser by name.

To press observers, some of whom flew New York-Montreal in an unmuffled North Star and then Montreal-Quebec in the new version, TCA's "favorable comparison" claim seemed entirely justified.

Start from Scratch

Canadair, Ltd., holding a contract to produce the mufflers for the whole TCA fleet of 23 North Stars, will begin deliveries early this June, the complete order to be filled by early fall. The new muffler costs 30% more than those currently in use, an indication of the importance placed on the noise problem by Trans-Canada.

The Rolls Royce 620 Merlin engines, military versions of which powered the North American F-51 and other wartime aircraft, are ideal for the TCA operation, according to the airline, because engine temperatures remain fairly constant over the wide temperature ranges the aircraft encounters operationally.

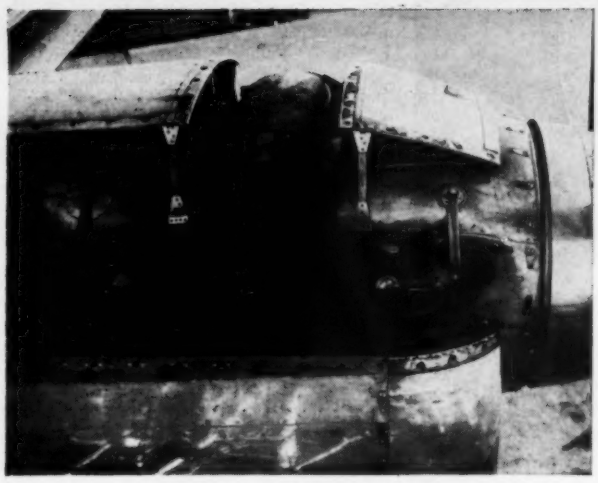
Since TCA and the RCAF set up specifications for early versions of this Canadair-built American-British combination (the airframe is akin to the Douglas DC-4 and DC-6), the noise problem is one of long standing with Trans-Canada. Little was known about muffling liquid-cooled engines, and TCA reports it had to start almost from scratch.

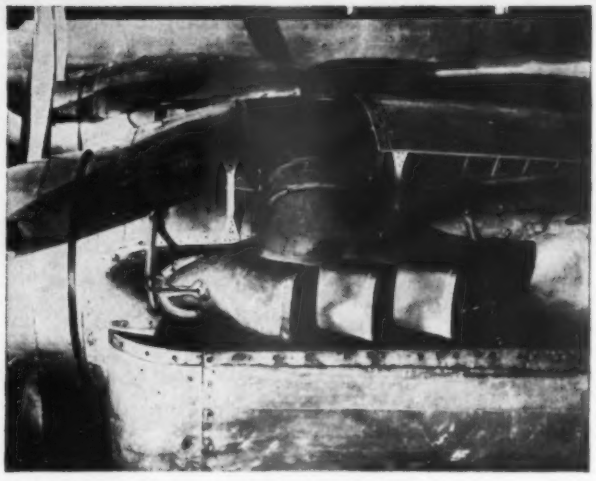
Organ-Pipe Resonance

First step consisted of adding a "Lincoln" manifold with a fish-tail outlet. This helped, but TCA engineers, searching for a more complete noise-suppression system, decided to lead the inboard exhaust from the naked stacks over the engine in a manifold. This would connect with the outboard exhaust and the two would be discharged under the wing.

TCA designed and built this system four years ago. It resulted in further noise reduction, but the construction of the unit gave rise to a peculiar condition in which an organ-pipe resonance was set up, causing a structural failure at the confluence of gases from the two banks of cylinders. The part of

BEFORE NEW MUFFLER, exhausts on North Stars were arranged as shown at left. Manufactured by Canadair, Ltd., the North Star is powered by four civil versions of the Rolls Royce Merlin.





EXHAUST FROM INBOARD stacks on Trans-Canada Airlines' Rolls-Royce 260 engines is ducted across the engine (left) to the outboard stacks (right). Here gases from the two banks of cylinders are discharged at the farthest practicable point from the cabin.

the manifold leading the gases below the wing was removed, changing the pipe length and eliminating the resonance. Now the gases from both sides were released at the outboard stacks, moving the single exhaust outlet still farther from the plane's fuselage and further reducing noise. This is the configuration of the present muffler.

Metallurgical problems encountered in the development were formidable, according to TCA. A metal for the manifold that would expand and contract relatively little was needed, since the manifold was considerably hotter than the liquid-cooled engine. Maximum temperature of the metal used is 1,680° F. In cruise, manifold temperature is 900° and 1,100° at take-off power, allowing a workable margin between working and critical temperatures. TCA found that the ducting used to direct the gases should be considerably larger than that usually employed. At the sacrifice of ejector thrust obtained from narrower ducting, the larger size permitted greater expansion of gases (slowing down their velocity) and lower manifold temperatures. Trans-Canada attributes much of the reduction in noise levels to increased size of the manifold.

TCA tests show that the reduction in noise is six decibels in the over-all range and 15 decibels in the speech frequencies. In the cabin, noise is reduced to 102 decibels near the windows and 93 at the aisle. But at speech frequencies, at which the unmodified North Stars seem particularly clamorous, TCA says noise levels on the muffled aircraft are 73 decibels at the windows and 70 along the aisle.

Four Helicopters

TCA lacks the equipment of a large factory, and the first four prototype exhaust assemblies were mostly hand-formed. Tests on these units revealed the striking noise reduction hoped for and indicated only one mile per hour reduction in cruise speed. This was caused by drag set up by air flowing around the cross-over part of the manifold to cool it.

First four production prototypes, made by Canadair, Ltd., according to TCA's blueprints, were delivered last fall. There was a question whether results from a manifold produced from production dies and tooling would be satisfactory, according to TCA. The Canadair-built mufflers were extensively tested on the ground, and after considerable flight testing were found satisfactory. They have since been put into service on the Montreal-New York route.

Inquiries at Montreal showed that, while public reaction against airport noise is perhaps not so acute in Canada as in the U. S., it is definitely growing in intensity. The new TCA mufflers were designed basically to curtail cabin noise, but overall engine noise is also reduced, marking a step in the right direction, Trans-Canada feels.

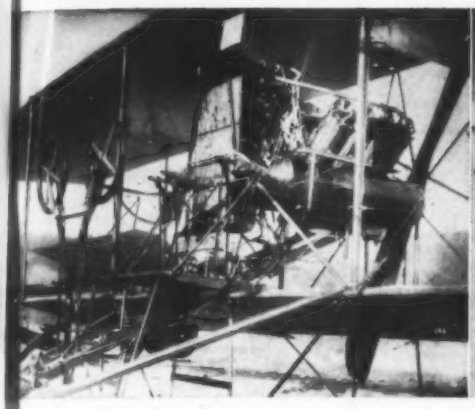
Man Behind the Muffler

MAC MacLeod, credited by TCA with development of the company's new cross-over exhaust muffler, has been in his day a racing-car driver and a flight mechanic with bush pilots in the sub-Arctic. Now supervisor of TCA's job methods and development, he is inventor of a special socket-joint now adopted by the entire aviation industry for civil aircraft engines. TCA cites his ability in practical research and inventive development as key to his improvization and development of a long array of aviation devices and components.

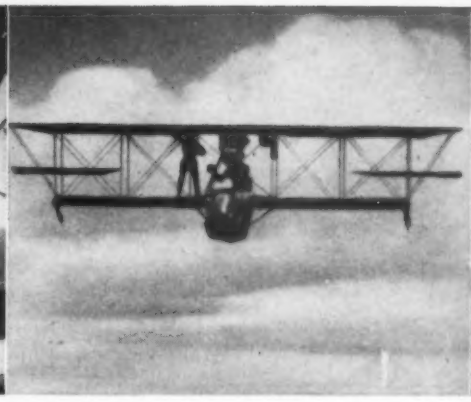
He was born at Olympia, Wash., and migrated to Canada in his youth where as a mechanic he flew with pilots hauling mining equipment to the far North. As an employe of Canadian Airways, TCA forerunner, MacLeod broke both legs in a crash on an icefloe. He dragged the pilot, partly scalped in the accident, free of the wreckage, and paddled the icefloe to the mainland.

Luther Harris, former vice president of Pacific Airmotive Corp. of California, and director of maintenance for the Berlin Airlift, has been elected executive vice president of Aircraft Engine and Parts Corp. A veteran of the aircraft industry, his experience dates back to 1917 and ranges from actual service "on the line" to field and maintenance engineering and operations work with the Air Force and leading aircraft companies and airlines.

40 YEARS OF AUTOMATIC FLIGHT...BY SPERRY

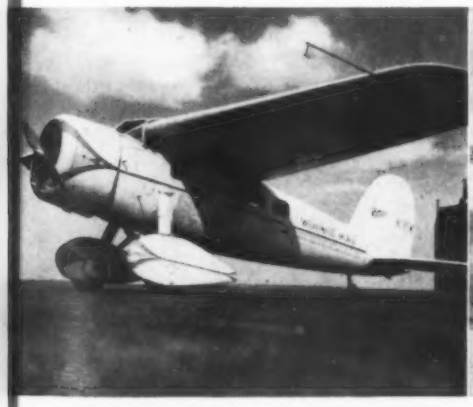


1912 The first Sperry automatic pilot was flight tested in a Curtiss hydroaeroplane in 1912 at Hammondsport, New York. This was the world's first gyroscopic automatic pilot to fly an aeroplane.



1914 Lawrence Sperry, in a public demonstration of automatic flight in Paris, 1914, won the International Safety Competition with his "stable" aeroplane.

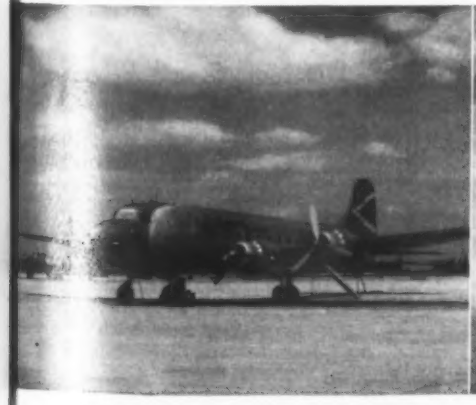
1916 Ancestor of the guided missile was the aerial torpedo developed during 1916-18 by Sperry working with the U.S. Navy. These automatically controlled "flying bombs" were tested over Great South Bay, Long Island.



1933 Automatic flight again won public acclaim in 1933 when Wiley Post made the first solo flight around the world with the Sperry automatic pilot as his "co-pilot" in the WINNIE MAE.

1937 First completely automatic landings were made by the U.S. Army Air Corps in 1937 by coupling radio aids to the Sperry automatic pilot.

1943 The first electronic automatic pilots flew thousands of B-24s in World War II and advanced the art of precision bombing by providing an improved stable platform.



1947 The first "pushbutton" aircraft, U.S. Air Force's All-Weather Flying Division's C-54, equipped with Sperry automatic pilot and automatic approach control, crossed the Atlantic both ways in 1947 without human hands touching the controls—including take-offs and landings.

1952 The modern Gyropilot* flight control is the outgrowth of Sperry's 40 years of research, development and manufacture of automatic controls for aircraft. This versatile, all-weather pilot represents a high-performance technique for automatic control which is readily adaptable to all types of aircraft—airliners, executive craft, jets, helicopters, lighter-than-air ships and guided missiles. This technique pioneered by Sperry has led to a new fundamental concept of flight for the aircraft of tomorrow. Sperry Gyroscope Company Division of The Sperry Corporation, Great Neck, New York.

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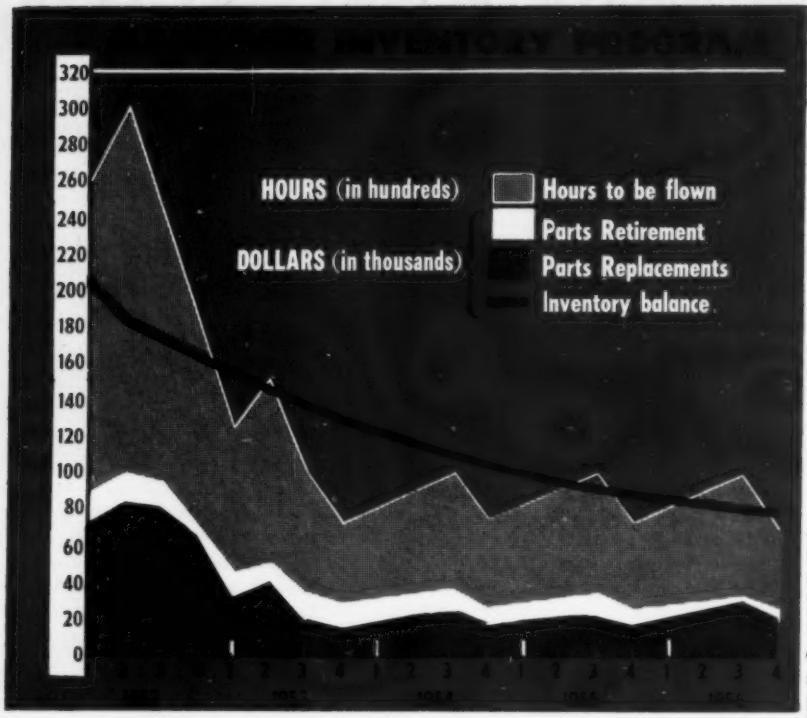


How UAL Keeps Tabs on Inventory

Pre-analysis of price trends and surveys of stores make for streamlined economy with 90% accuracy.

WHETHER you sell air transportation or wheelbarrows, it's good business to know the cost and quantity of supplies you must add to inventory in coming months and to set aside funds to buy them.


O'Leary

If your estimates are reasonably accurate, you'll have a going concern with trim inventories, cash on hand for supplies, and budgets that stay in line. Miss by a wide margin and troubles pile up. If you overshoot, money that could be at work lies idle in stock gathering dust. Undershoot and you've got to scramble to replenish empty shelves. Either way is costly and inefficient.

Forecasting airline inventory needs and cash outlays is particularly challenging. For a major company it will involve millions of dollars and some 50,000 different items. Price fluctuations, materials shortages, obsolescence and other variables hold pitfalls for unwary prophets. Offhand it would seem that little more than informed guesswork could be attempted.

Yet United Air Lines has developed techniques to forecast inventory expenditures with what amounts to scientific precision. To date they have achieved minimum accuracy of 90%.

United's inventory forecast is prepared quarterly by the Purchasing & Stores Department directed by D. V. O'Leary. Data for the forecast come from three main sources:

• **Quarterly reports** of the company's Economic Controls Administration, estimating operations for the succeeding 12 months.

IBM Control

The estimate includes the number of hours to be flown monthly by DC-3's, DC-4's, DC-6's, DC-6B's, Boeing Stratocruisers and, beginning this summer, Convair-Liner 340's.

• **Monthly inventory reports** on stock balances and value of items on hand in terms of aircraft types.

These reports accurately reflect the costs of materials consumed during each period. Costs then are related to future productive capacity (hours flown) for derivation of costs per hour of flying time by types of aircraft in months ahead. Stock-level data enables calculation of replenishment rates, which are applied in developing data for future commitments.

In this important phase of forecasting, United is aided by the fact that it was the first airline to install mechanized (IBM) control of its entire inventory. The company has 13 inventory analysts, each responsible for approximately 4,000 of a total 54,000 items. IBM reports at weekly, monthly, and quarterly intervals give stock levels, specific valuations, and other data. Average costs and rates of consumption thus are readily obtained.

• **A semi-annual survey** of commodity groups.

Surveys & Forecasts

Every six months, or oftener when economic conditions warrant, United's buyers survey price trends, shifts in lead time, and the general state of the market. The survey is limited to 30 vendors who command 76% of the company's outlay for supplies and equipment. Resultant information is used to formulate price indexes and to anticipate delivery lags so that timing of cash payments on commitments for future delivery can be determined. Inventory analysts also are cued on future action in regard to prices, lead times, and available storage space.

Purchasing and Stores forecasts also are valuable in assisting United Air Lines in estimating monthly commitments and cash outlays on items other than inventory, as well as monthly costs of materials and supplies. Departmental expense budgets also are evaluated in the light of trends evident in price indexes.

Gas and oil requirements are a major item in the forecasts, since 13% of United's expense dollar is earmarked for fuel. Current daily consumption exceeds 250,000 gallons. The company's fuel vendors have access to each forecast as an aid in planning production.

Forecasting inventory levels enables United to establish realistic depreciation reserves on parts and supplies by types of aircraft. The amount of depreciation is included in monthly operating costs so that aircraft and parts can be written off in pre-determined periods. Inventory-level forecasts also are used in estimating the company's cash position as much as five years in advance.

Purchasing & Stores inventory and price forecasts become part of United's overall forecast of expenditures as consolidated by the Economic Controls Administration under the direction of Vice President H. E. Nourse. The price indexes are applied to the consolidated forecast, reflecting future price changes in the expenditures.

Additions to United's inventory, in-

cidental to forecasting, are governed by a re-order policy adopted several years ago. The policy permits purchase of as much as a two-year supply of lowest annual dollar usage items (less than $40 yearly) but restricts ordering more than a month's supply of the highest annual dollar usage items (over $10,000).

Items costing $40 to $200 annually are purchased in quantities to last 12 months; from $200 to $400, eight months; $400 to $1,000, six months; $1,000 to $2,000, four months; $2,000 to $4,000, three months; $4,000 to $10,000, two months; and above $10,000, one month. Forty per cent of all items stocked by United are in the lowest-dollar-usage category, as compared with one per cent in the highest bracket.

Inventory Level

In provisioning new items, such as parts for 40 new Convair-Liner 340's to be delivered this year and in 1953, United's re-order policy does not apply. The company's buyers order supplies for 10 to 12 months because of potentially lower unit prices resulting from manufacture of spare parts with those used in assembling the aircraft.

The company already knows the usage rate of many components of the 340.

NWA Contract Assures Hunter's Job to 1958

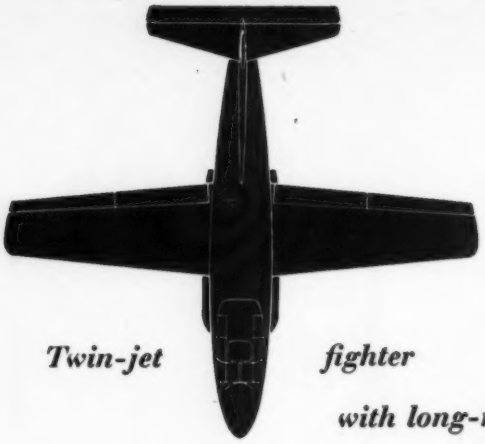
Croil Hunter, Northwest Airlines president, has received a contract from the company whereby he will be employed until he reaches the normal retirement age of 65 in 1958. The contract guarantees him an annual rate of not less than $48,000 during that period.

The contract, revealed in proxy material sent out on the NWA-Capital merger, was dated January 28, 1952.

Scott Nominated for Transportation Post

The President's nomination of Washington attorney Jack Garrett Scott to be Undersecretary of Commerce for Transportation will fill the post vacant since November when Delos Rentzel resigned.

Scott, engaged in private practice since 1944, specialized in transport matters. Prior to that he served in government posts, including National Recovery Administration attorney from 1933-1935; chief law and enforcement section attorney for the Bureau of Motor Carriers of the Interstate Commerce Commission from 1935-1942; and general counsel of the Office of Defense Transportation from 1942 to 1944.



Twin-jet fighter with long-range radar eyes

—the Douglas Skyknight

Designed and built for Navy carriers, the Douglas F3D Skyknight provides our fleets with round-the-clock protection. Attack, patrol, reconnaissance, or escort, Skyknight can handle them all.

Aided by its radar eyes, the Skyknight can search out distant targets 24 hours a day. The pilot of this unique two-man, twin-jet, long-range fighter—guided by his radar operator—comes in on targets with split-hair accuracy . . . to hit with both rockets and bullets. And although Skyknight approaches sonic speeds, its hydraulic flaps can slow it down for combat maneuvers or carrier landings.

The carrier-based F3D Skyknight, now in volume production, is typical of Douglas leadership in aviation. Planes that can be mass-produced to *fly further and faster with a bigger payload* is the basic rule of Douglas design.

Depend on *DOUGLAS* First in Aviation

When Is A Pilot Too Old?

We have a lot to learn about aging before we can answer that question, says this noted authority in the first of a series of articles.

By Dr. Ludwig Lederer, M.D., Ph.D.

WITH ALL of the recent comments and action provoked by the Newark Airport situation, the emphasis being put on air safety today is the most prominent of all efforts within the industry. The formation of the President's Doolittle Commission is evidence of the national interest in this subject.

Perhaps one of the most vital subjects with reference to safety is the pilot age problem. The industry itself has now aged to the point where some pilots are old enough to be considered for retirement.

No Adequate Test

Now we all agree that aging begins nine months before we are born. We also agree to some extent that chronological age and physiological age are not always identical. We have many examples of premature aging in individuals, and we can point to some people who seem to never "show their age." However, when we get right down to medical brass tacks, the criteria of premature aging, such as greying or absence of hair or wrinkling of skin, show very little correlation with ability to safely operate transport aircraft.

I recently attended a conference held at Randolph Air Force Base, sponsored by the Air Force School of Aviation Medicine. A roundtable discussion was held and it was very apparent that no adequate test or battery of tests existed which could be used to answer the age problem at this time.

This entire question is very complex; it has tremendous economic repercussions. The question of retirement age is inherently connected with company policy, personnel procedure, and insurance programs. The question also has not been settled as to who should prove that the pilot is too old to fly. Should it be the pilot? Should it be the transport company? Is it an obligation of CAA medical certification procedure?

We will not find a willing subject to study for proper retirement age unless adequate financial security has been arranged to take care of him and his needs in the event that the study proves that he should discontinue his present occupation. Therefore, the subject of the study is not ready to present himself. Adequate criteria for study of aging are lacking and clinical tests are meager to date. What clinical data is available should be validated against the task performance.

We are not prepared to say that a so-called "normal" pilot of, say, 65 years of age is not qualified to exert optimum muscle exertion to handle properly and safely the landing of a four-engine transport aircraft. Few experts in aviation medicine can certify *with valid data* that a blood pressure of 170/100 causes a uniformly poorer cockpit performance than the so-called normal. It seems that for the present we can only attest to the fact that clinical entities which can cause sudden incapacity or apparent signs of decreased medical fitness are incompatible with safe performance. The answer which we are seeking in aviation medical circles is what tests can be devised, with proper validation, which will tell us *when* pathological, physiological, and psychological changes due to age are no longer compensated for by the judgment, skill, and experience of the pilot.

Heart Tests

The discussion thus far indicates a rather difficult problem to solve. However, the medical profession has not been idle in trying to evolve adequate clinical tests for aging. Some concrete steps in this direction have already been taken. Perhaps the greatest emphasis has been in the field of cardio-vascular, i.e. heart, disease. The measurement of amounts of circulating fats, such as cholesterol, and identification and behavior of the type of cholesterol molecule is one endeavor. This is important because it is known that there is a tendency in some people to form fatty cholesterol placques in blood vessels, especially in the coronary arteries. Such formation of deposits predispose to coronary thrombotic attacks.

Another endeavor is to develop keener function tests for the heart. The taking of electro-cardiographic tracings when an individual is under stress of exercise, such as the Masters' two-step test, gives indications of impending trouble in the coronary circulation. An extension of this type of thinking is the perfection of the velocity-type ballisto-cariograph. The ballisto-cardiograph is, as its name implies, a measure of the force of the output of the heart. This

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Efforts will be made in this column to present to interested readers in the field of aviation transport some of the problems with a medical aspect that confront the industry. To some it may be strange that one branch of medicine should be so specialized. However, this specialization has become a reality and is on the verge of being so recognized by the formation of an American Board of Aviation Medicine, accepted by the profession in general.

Some of the topics presented may be of a controversial nature. The comments presented in this column are those of the writer. They are in no way to be construed as official opinions of some of the connections of the author, such as his connection with Capital Airlines, with the Air Transport Association, nor as the past president of the Airlines Medical Directors' Association.

is measured by picking up the velocity impulse or thrust of each heart beat and recording it visually on paper. The measurement of curves then predicts failure of the heart muscle to perform its task adequately.

Another development in the perfection of tests is the application of the function of the adrenal glands to fatigue and impairment in man. The measurement of urinary excretion of 11 and 17 dihydroxy-ketosterones gives us an indication of the function of these glands. The response in the secretion of these substances to stimulation by ACTH, i.e., adrenocorticotropic hormone, and/or cortisone is another possibility of testing procedure.

Tests Are Costly

The difficulty with some of the above procedures is that none of them are routine tests. They are costly and require a good deal of *new* medical instrumentation, and interpretation of results is not as yet on an established plane.

Perhaps, as these and other tests are developed and data accumulates which can be validated with cockpit performance, then—and only then—can the medical man in aviation be ready to present his side of the case in the problem of aging.

In evaluating the aging pilot, the medical data in my opinion should *not* always form the sole basis of recommendation for retirement. Steps should be taken by the pilots, the company, or a certification agency to form a retirement board of review very much like the pilot selection boards which worked so well in various companies during the last war.

The pilot retirement board might consist of pilot representatives, personnel people, check pilots, and medical representatives. All the pilot's occupational activities should be subject to review. The medical findings, which present only one facet of his occupation, should be correlated with findings of actual cockpit performance as reported by those who are competent to judge his cockpit performance with reference to safe operation. Perhaps, after a plan like this has been in operation for some time, average figures of retirement age might be produced with some token of validity.

"Retirement age" is a term with a very elusive meaning. The figure which pops into most people's minds is somewhere from 50 to 60 years of age. This figure should never be permitted to jell. With the recent advances in geriatrics, that branch of medicine devoted to the care of the aged, and the increases of life spans due to the judicious and timely use of the antibiotics like penicillin, polymycin, terramycin, aureomycin and chloromycetin to combat infections before complications cause debilitation, the whole outlook of the 60-year-old individual is not that of the 60-year-old man of 10 years ago.

Answer Somewhere

The views expressed on this problem are those based on our present-day knowledge of the subject. The approach to solving this problem is beset with many pitfalls. Pressure politics of younger age groups trying to create jobs "at the top" is only one of the numerous detours which will be encountered. The role of the aviation medical examiner must be one of objectivity based on sound, scientific data. Curbstone opinions must be avoided, or the medical aviation comment will be placed in jeopardy, and the ugly words of "tool of management" will be hurled at many. Somewhere there lies an answer to this problem. It can be attained by teamwork, research, and above all, an honest endeavor to continue to keep air transport operation as safe as is humanly possible.

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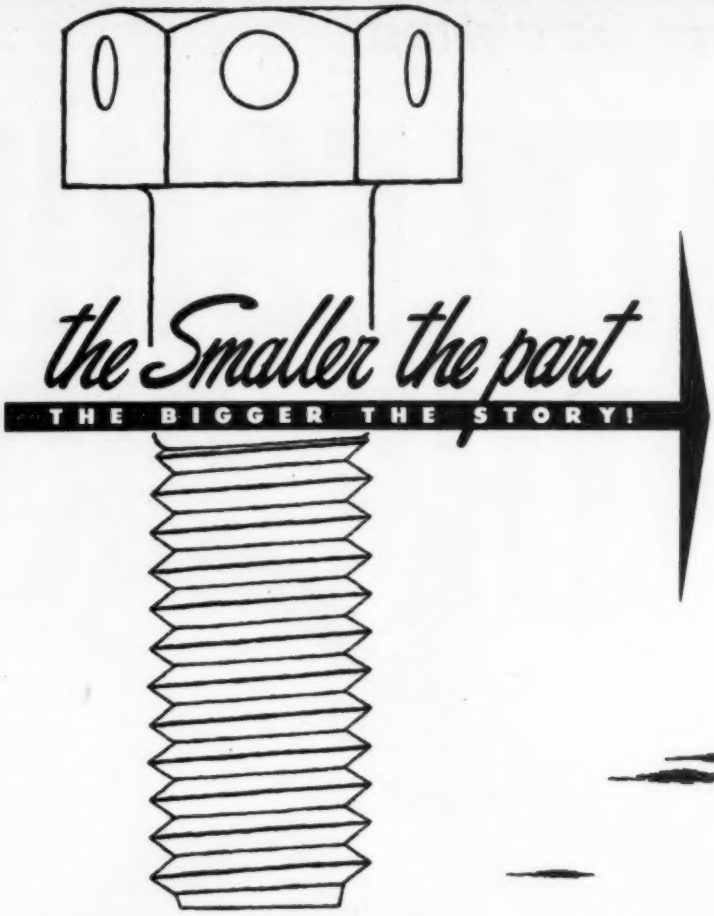

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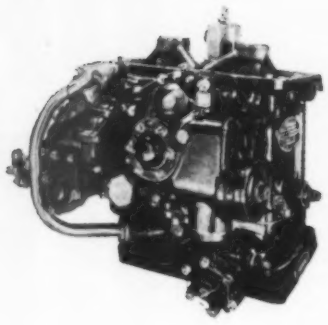

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DIRECTOR OF CAA's Technical Development and Evaluation Center, D. M. Stuart, checks the operation of the new Hazeltine ground DME transponder at TDEC's Indianapolis headquarters.

Interrogator Readied for DME Units

New design makes distance-measuring equipment stations possible in year, simplifies navigation.

By ROBERT M. LOEBELSON

(First of two articles)

A CARDINAL rule in flying is that the pilot should know where he is at all times. In other words, he should know his distance and direction from a fixed ground station. With the VHF omni-directional navigational system rapidly coming into use in the U. S., pilots flying the airways can obtain a "fix" to determine their position by using triangulation from two or more omni-directional ranges (ODR).

It will not be long, however, before the pilot will be able to obtain a fix by using only one ODR station, considerably simplifying his job. The answer is distance measuring equipment (DME). It has been under development since 1946 and is still not perfected. But ground DME stations are being installed in various parts of the country and flight tests have started on an airborne piece of equipment small enough to fit into the private or executive airplane.

One civil airway, that between New York and Chicago, is already completely equipped with ground DME stations and has been used for check flights by a Civil Aeronautics Administration DC-3 fitted with airborne DME equipment. Thus far the airway has not been used by military, commercial, executive, or private pilots to measure distance for one basic reason—there is no reliable airborne piece of DME equipment, known as an interrogator, on the market as yet.

As a matter of fact the DME ground stations (transponders) on the New York-Chicago airway are already considered obsolescent by CAA, which bought them from Federal Telecommunication Laboratories, Inc., Nutley, N. J., an International Telephone and Telegraph subsidiary.

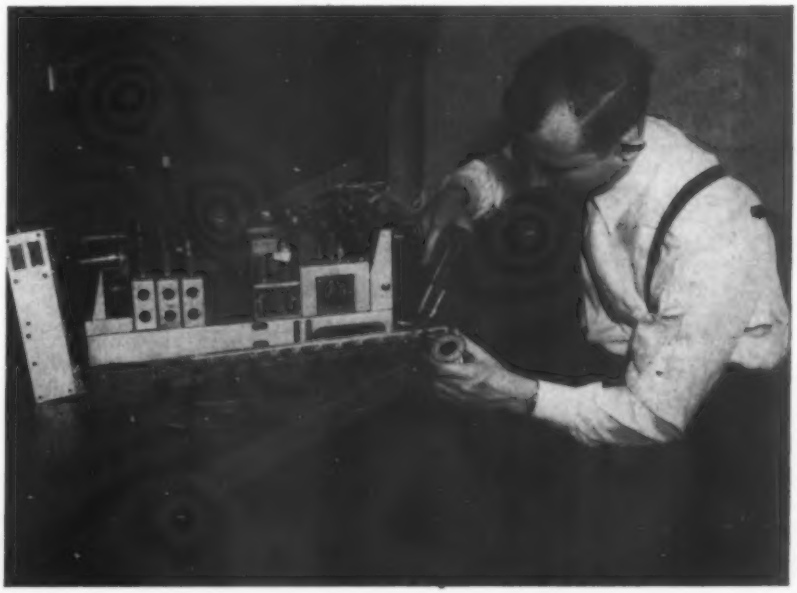
CAA officials have no real complaint against the Federal ground DME's, but have placed an order with Hazeltine Electronics Corp., Little Neck, N. Y., for 450 new transponders at a cost of about $12,000 each. The Hazeltine model, they say, is better for their purposes for two main reasons:

15 Delivered

• **It has an automatic switchover** feature, i.e., if the left side of the transponder should fail, a duplicate panel on the right takes over with no action by the operator. This dual monitor system was lacking in the Federal model.

• **It is crystal controlled,** meaning that it has more power and improved frequency stability.

The 450 Hazeltine transponders are to be installed in the same locations where CAA is now operating omniranges. The Long Island firm has delivered about 15 so far, is producing them now at the rate of 15 a month and expects to increase production to 40 a month before winding up deliveries in the summer of 1953. First model was delivered last October and was installed by CAA at Wilton, Conn. Since that time others have been placed in operation at such diverse spots as Pough-



R. C. BORDEN, chief of the radar branch at TDEC, makes minor repairs on the 55-pound airborne Federal DME interrogator.

keepsie, N. Y., the Indianapolis headquarters of CAA's Technical Development and Evaluation Center and Rome, Italy. This last was furnished as part of the Mutual Security Agency program.

Thus, with the ground equipment program well under way (the CAA contract for the Hazeltine transponder was let in March, 1950, and the prototype delivered to TDEC one year later), government officials concerned with aviation started thinking of the accompanying airborne interrogator. CAA had already let a contract to Federal for a large sized (55 pound) interrogator and had found it generally satisfactory after eliminating the "bugs" found in any new piece of electronic equipment. This is the DIA (Distance Interrogator, Model A) which TDEC is now flying in its DC-3.

Three Firms

Accordingly, the Air Coordinating Committee's Navigational Panel recommended that contracts be let for the development of two types of interrogators suitable for use in private and executive craft and in military fighters. This recommendation went to a governmental agency, the Air Navigation Development Board, which provided the money for TDEC to let the contracts. On April 19, 1951, TDEC wrote the specification for a miniaturized version of the Federal interrogator and followed up with a spec for a lightweight version on May 3 of that year. Both specs, however, were flexible enough so that the companies winning the contracts could insert some of their own ideas.

Three firms were awarded contracts to produce 20 interrogators each. Hazeltine and National Aeronautical Corp. (Narco) of Ambler, Pa., were ordered to build lightweight versions for use in private planes. Hazeltine's contract called for $216,920; Narco's for $216,760. Stavid Engineering Co., Newark, N. J., won a $137,985 contract to produce a miniaturized model of the Federal interrogator suitable for use by the Navy and Air Force. Here's where the three companies stand on development now:

• **Hazeltine** has completed its first interrogator for ANDB and TDEC. It was completed March 27 and test-flown satisfactorily at five DME stations around Chicago, Indianapolis and Dayton, according to company officials. Deliveries on the 20 on order by CAA will start in June. Hazeltine's interrogator, which measures 6¼ inches in height, 6¼ inches in width and 9 inches in depth, weighs about 12 pounds (with hopes of getting it down to 11) plus 10 more pounds for the power supply. Company officials are highly optimistic about the unit's potentialities for private and executive planes. Plans are also under way for production of a model for commercial transports and Hazeltine has already lined up a foreign distributor to handle sales of its DME interrogators in foreign countries.

• **Narco** has not yet produced its first interrogator under the CAA contract but expects to start delivering the 20 units sometime this summer. It conforms to the same specifications as the Hazeltine model (100 frequencies, weight maximum of 30 pounds, same volume, coverage of up to 100 nautical miles, etc.) It differs however, in that it has a remote channel-selector switch and is crystal-controlled for better transmission and reception. Narco officials explain that they are keeping their unit in the laboratory "until it meets or exceeds CAA's specifications" and TDEC officials feel this version may well be *the* DME interrogator, not only for private and executive planes but possibly for transports as well. Narco plans to start commercial production in 1953.

Different Problem

• **Stavid** has a different sort of a problem. Its interrogator is being developed for ANDB without too much regard for cost but is simply an attempt to build one with miniaturized parts and retention of high performance characteristics. Stavid is encountering many unexpected problems and does not expect to have its version ready for test flights for several months. Stavid's plan calls for a remote channel selector circuit, a direct crystal-controlled transmitter and a crystal-controlled receiver.

Many features of DME are similar to radar, the basic difference being that radar transmits a signal and receives the same signal after it is bounced back from a target, while DME uses an entirely different signal for the return trip. Basically, here's how DME works:

The interrogator sends out pulses on one of 10 channels in the band between 962.25 to 987.25 megacycles. These pulses are received at the ground transponder which transmits them back to the plane on one of 10 different channels between 1187.25 and 1212.25 megacycles. Thus there are 10 combinations which could be used to transmit and receive. The time required for the round trip to the ground station is measured by the plane's DME equipment and translated into distance between the two. An indicator on the plane's instrument panel shows this distance automatically and continuously. The equipment is strictly line-of-sight, i.e., a signal can be transmitted and received only if there are no obstructions between the plane and ground station.

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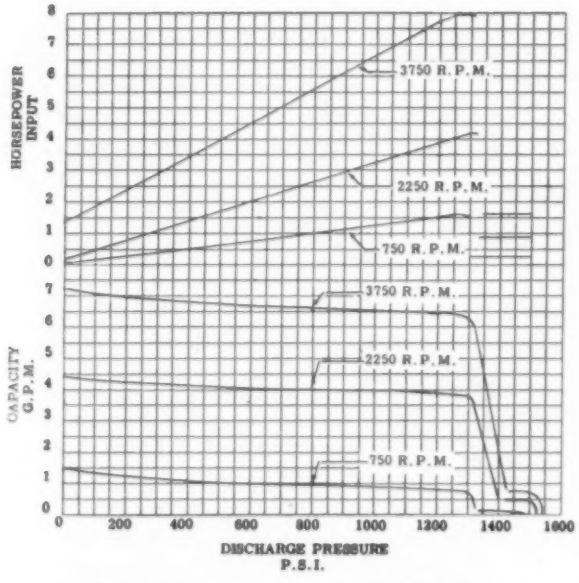

This chart shows performance characteristics of Pesco Unloading Pump. Write for detailed engineering drawings and performance data.

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AUTOMOBILES being loaded aboard Silver City Airways Bristol freighter for ferrying across the channel.

SAE Hears New Plans for Aerial Car Ferry

Powell of Silver City Airways tells meeting of equipment being planned for English Channel route.

THE AERIAL car ferry operated across the English Channel by Silver City Airways Ltd. was a novel experiment in air transportation and has proved eminently successful. At present it consists of short hops of 47-88 miles from the English coast to the French coast and return, but its operators have big plans for the future. Among them:

• **Utilization of a large, pod-carrying** helicopter capable of lifting a five ton container with space for two cars and a passenger cabin to operate short route segments, probably picking up where the present ferry route ends at either side of the channel.

• **Employment of larger, four-engine** air ferries, capable of carrying six autos over a 150-175 mile stage length, such as a direct London-Paris route.

These future plans were disclosed by Air Commodore G. J. Powell, managing director of Silver City Airways, before the National Aeronautic Meeting of the Society of Automotive Engineers, held April 21-24 in New York.

Such new developments would supplement the present cross-channel operation, not replace it, Powell pointed out. The four-engine, six-car carrier he expects to be available for economic operation in three or four years. The helicopter should be technically possible within five years, Powell believes, and available for actual operation well within the working life of the company's present aircraft.

Silver City's history goes back to 1948, when the company decided to develop a business of flying automobiles where they could not drive. In normal times, there is an "immense" two-way automobile traffic between England and the continent, traveling via water ferries. Silver City reasoned (and correctly, as it turned out) that an air ferry capable of cutting the overall time of the channel crossing (including customs clearance, loading, etc.) to less than an hour offered a tremendous tourist potential.

Simple Operation

In 1948, operating only one plane, Silver City carried 178 cars and their passengers across the Channel. In 1949 the traffic built up to 2,700 cars and 10,000 passengers and in 1950 it climbed still further, to 5,000 cars. Last year it reached 13,000 cars and 30,000 passengers.

The operation is very simple. The motorist arrives at the airport half an hour before scheduled flight time, has his passport checked, and takes his car through customs, leaving the baggage on board. Then the car is driven up a ramp into the air ferry and flown across the channel. The fare he pays is competitive with that of the water ferry.

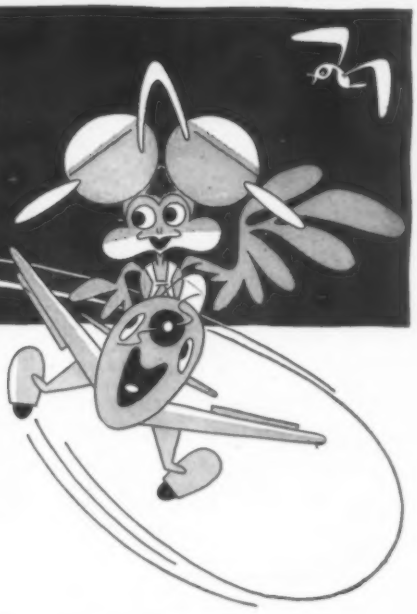
Silver City's main route is between Lympne, on the British Channel coast, to LeTouquet on the French side. Total time for the operation on this route is 22 minutes, including four minutes of taxiing time, three minutes for landings and 15 minutes at normal cruise. Distance is 47 miles. Recently, the carrier inaugurated two new routes—one from Southampton to Cherbourg and another from Southend to Ostend. Distance on both these routes is 88 miles.

The airline operates twin-engine Bristol Freighters, powered by Bristol Hercules engines rated at 1,690 horsepower each. Gross weight of the Freighter is 40,000 pounds, but weight is never a problem on the short Channel run. Normal load is two cars, two motorcycles, and their passengers. Silver City now has eight Freighters in commission and six new ones on order. The new planes will be lengthened versions of the Freighter, capable of carrying three cars instead of two. They will be delivered next spring.

Since the cross-Channel tourist business is seasonal, Silver City is now developing new revenue through deliveries of new cars built in England and sold on the Continent. One Paris distributor is now promising 24 hour delivery on new cars of English make, counting on the air ferry to get them there. Thus, Silver City will be able to maintain a respectable load factor through the winter months. Sliding bulkheads will permit utilization of the Freighters either as tourist car ferries or new car delivery ships, in which the passenger cabin would be eliminated by moving the bulkhead all the way forward.

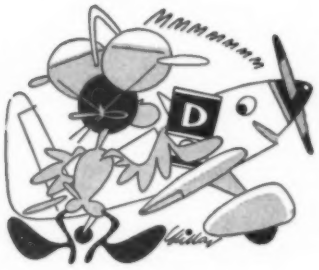
The service is already on a year-round basis, ranging from four round trips a day in the winter to 36 or more by mid-July. High for 1951 was 42 round trips on the Lympne-LeTouquet run in late July. Silver City schedules six or seven trips per day per plane when the demand requires, and can push it as high as eight if needed.

What's the right oil for *your* airplane engine?



You've heard so much about aircraft oils you probably want to know which one is best for *your own engine*. Good idea. You'll fly more safely, no matter what type of engine your plane has, if you use the *right* oil for your engine type. For example:

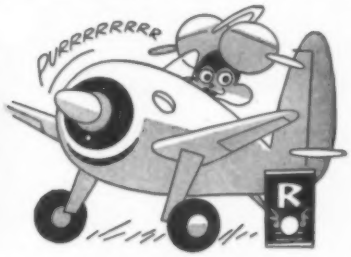
Horizontally opposed engines need Gulfpride Aviation Oil Series-D!



Here's the world's finest detergent-dispersant aviation oil. It's made *exclusively* for use in horizontally opposed engines. Because it is put through Gulf's exclusive Alchlor process to remove extra amounts of carbon-and-sludge formers, Gulfpride Aviation Oil, Series-D, prevents ring and valve sticking . . . maintains a cleaner, better operating condition longer.

Actually, users have increased periods between engine overhauls as much as 100% with this great oil!

For radial engines or where a detergent oil is not desired, use Gulf Aircraft Engine Oil Series-R!



Assures superior performance in radial engines. Especially recommended for maximum operating periods between overhauls, it may also be used in horizontally opposed engines when operating conditions do not require a detergent oil.

A fine-quality, non-detergent, straight mineral oil, Gulf Aircraft Engine Oil, Series-R, is highly effective in retarding sludge formation. Maintains its body at high operating temperatures, too.

GULF

AVIATION PRODUCTS

For More Flying Fun—Don't Settle For Less Than Gulf!

And remember—the Gulf Airgide Directory lists Gulf airport dealer locations and many others throughout the U. S. and Canada. Comes in mighty handy. Get your copy from your Gulf dealer.

Extra Section

By William D. Perreault

IT PAYS to advertise. Proof positive of this was provided one prominent airline official whose picture appeared in a recent Champion Spark Plug Company advertisement. Shortly after the ad appeared he received this dividend via the mails: "I see your picture in advertisement and I do admire your picture. I have been married but my husband is dead, has been for two years, so if you are interested please let me hear from you." Guess Champion is spark plugging a romance.

•

Sometimes, looking at an overhaul base like United Air Lines' in San Francisco, you find it difficult to visualize the output in tangible terms. A summary tends to highlight the production accomplishments of UAL's shops: In 1951 UAL overhauled 270 Mainliners; 498 propellers; 1,041 engines; 1,472 generators; and 284,100 spark plugs. Cabin overhaul activities used some 13,000 square feet of leather, 15,000 yards of upholstery fabrics, and 50,000 square yards of carpeting.

•

From England comes word that 18 employees of British Overseas Airways Corp. have had their "ground engineer licenses" (mechanic's certificates) endorsed for work on passenger-carrying jet transports, specifically the de Havilland Comet, which is scheduled to be in service before this reaches you. Only one of the 18 men, I. M. Paton, was endorsed for both aircraft and engine work. The remainder were licensed for either aircraft or engines.

•

In the engine overhaul shop at Southwest Airmotive Corp. at Love Field, Dallas, Texas, where they probably overhaul more P&W R-980 engines than at any other spot in the country, hangs the following sign: "If you are a mechanic show it in your work."

•

In our last issue we reported on airline safety in terms of fatalities per 100 million passenger-miles and aircraft-miles per fatal acident. In the April issue of *Fortune* magazine we noted the following interesting commentary on automotive safety. In an article titled "Millon Dollar Miles," referring to the new superhighways, *Fortune* reported that there were ony 156 accidents per million vehicle-miles in 1949 on superhighways, versus 1,187 per 100 million vehicle-miles on U. S. rural roads.

•

We were about to go in mourning for the annual ATA Engineering and Maintenance Conference, which has apparently seen its last days as a three-day, 500-man meeting ground for engineers, supervisory maintenance men, and manufacturers' representatives, when we started hearing the results of some of the more specialized meetings. It's claimed that the airline meeting with Lockheed's engineers was really productive. So was Goodyear's wheel-and-brake clinic. Others are looking forward to Texaco's fuel-and-oil session later this month. Nonetheless, we'll miss those conventions.

•

A gasoline fire set off by static electricity cost one of the airlines a Lockheed Constellation late last month. The incident followed shortly after a release from the National Safety Council stressing this type danger and adding: "As soon as the fueling equipment or aircraft is in place, these three specific bonding connections must be made: (1) from the truck to a satisfactory ground; (2) from the aircraft to ground; and (3) from the truck to the aircraft." The NSC will soon issue a booklet entiled "Aircraft Ground Fuel Servicing—Fire Hazards." You might want to look at it.

Maintenance Bulletin Board

New Lamp Unit Gaining Favor as Air Freshener

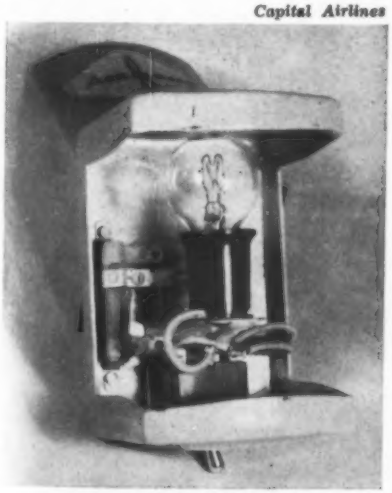
All American Airways has turned to an new Westinghouse ozone light, in a package designed and built by Aviation Mart Company, to keep the lavatory area free of odors. Capital Airlines is now testing the same Aviation Mart unit in its fleet and other airlines are showing interest.

The light, known as an Aerozone unit, consists of a standard Westinghouse Odor-out lamp packaged in a simple aluminum housing weighing about six ounces, and electrically arranged to operate directly off the aircraft's direct-current, battery-generator circuit. The Odor-out lamp is used in clothes dryers and other applications to provide a "fresh smell."

Mercury Used

The lamp contains mercury which vaporizes when current flows through the filament. This generates ozone, which freshens up the air. A single bulb, operating on 110-volt alternating current, is rated to take care of about a 1,000 cubic-foot area. Several airlines are reported working with installations which use 115-volt alternating current from the inverters for this application.

Capital Airlines



AEROZONE UNIT

All American called in Aviation Mart Company, Box 96, Alexandria, Va., to work up a circuit suitable for use with 24-28-volt direct current. This makes it feasible to operate the lamp with the inverters inoperative and in aircraft without inverters. While this undoubtedly alters the effective rating of the lamp, All American's early experience indicates it is still adequate and the line has started to install Aerozone units in its entire fleet.

The All American installation consists of a double-pole, double-throw switch connecting the unit to the battery-generator circuit via a circuit breaker and the bus bar. Between the switch and the base of the bulb is a 45-ohm resistor. The switch makes it possible to alternate current flow through the bulb filaments to extend bulb life.

The housing measures 3 inches by 3 inches by 4½ inches, and the top is provided with rearward-facing louvres to provide venting of the light compartment. It is not considered advisable to stare at the ozone lamp, and the louvres arrangement prevents this. The unit is mounted on the lavatory wall or under the sink in the All American installation.

United Adopts Miner's Lamp for Maintenance

United Air Lines has adopted Mine Safety Appliances Company's miner's safety lamp as a utility light in routine maintenance work around engine accessory sections, in the "hell hole," and in similar darkened areas. The MSA lamps, which are capable of burning continuously for at least 10 hours without recharging, throw a generous beam of bright light.

The lamp is a direct descendant of Thomas A. Edison's first miner's safety lamp built 36 years ago and is known as the Edison R-4 Lamp. The current model, result of joint research by Thomas A. Edison, Inc., General Electric, and Mine Safety Appliances Co., is of nickel-iron-alkali construction, relatively unaffected by long idle periods, constant recharging, and many other abuses.

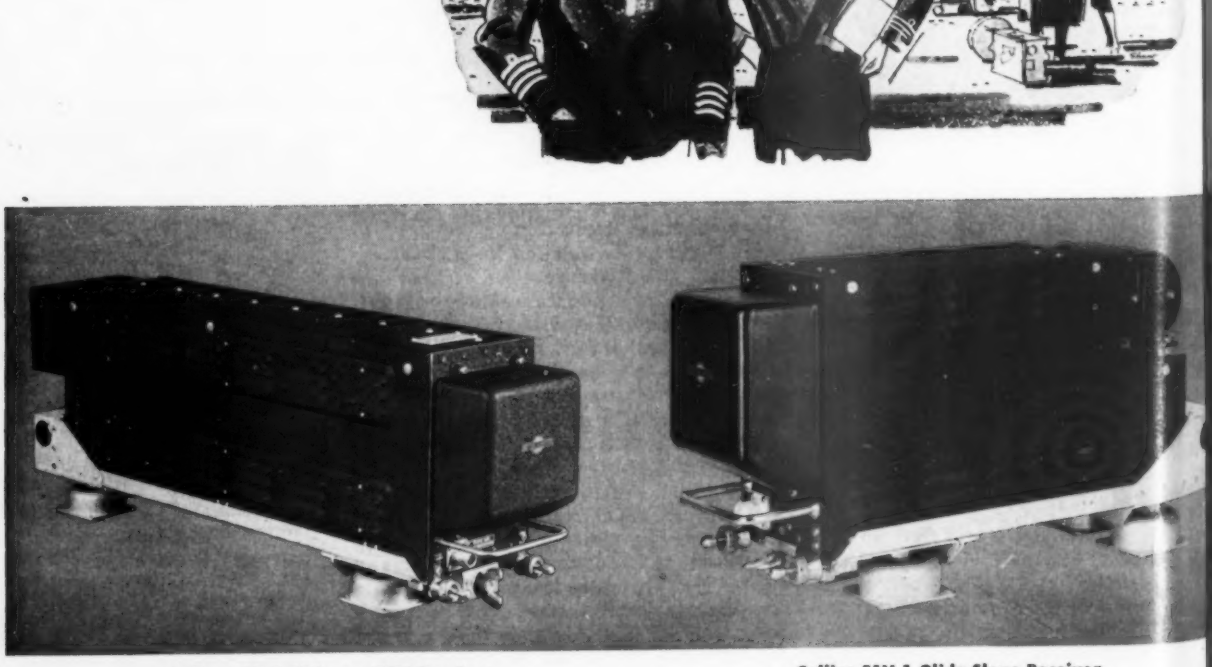
No small factor in United's choice of the R-4 lamp is its safety aspects. Two filaments in a gas-filled bulb, of equal candle power, assure continued light if one burns out. If the lamp lens and bulb should break, the bulb base automatically moves away from the contact points, interrupting the circuit. This would, it is said, cool the filaments before ignition of flammable gases occurred.

PRESSURE CHECKING the Northrop F-89 Scorpion, to determine that the cabin is effectively sealed for pressurization, a mechanic goes over the critical areas with a doctor's stethoscope. This check follows indications of excessive pressure drop on a regular gauge system.

AIR FRANCE

first European airline to equip its fleet for VOR

. . . equipment by COLLINS



Collins 51R-3 Airborne VOR Receiver

Collins 51V-1 Glide Slope Receiver

The winged sea horse emblem of Air France, the French National Airline, symbolizes more than world-famous cuisine and luxury service. It symbolizes, too, a long record of operational and technical achievement — a record recently embellished by the purchase of Collins 51R-3 receivers to equip the Air France fleet for VOR.

Air France is the first major European airline to fit its fleet with VOR equipment and modern glide slope receivers. In pioneering this great airline advancement in Europe, Air France turned to the leader in VOR for equipment — Collins Radio Company. Collins VOR equipment flies with almost every leading airline in the United States, and the proven reputation of this dependable equipment made Collins the natural choice.

Collins 51R-3, 280 channel, VOR navigation receivers will comprise the major unit in the new Air France installation, with accompanying Collins antenna, accessories and instrumentation providing a system designed for maximum effectiveness and reliability. Utilizing the 51R-3 ILS localizer function, Air France will also install Collins 51V-1 Glide Slope Receivers to complete its installation of modern aids for radio navigation and ILS approach flying.

Collins congratulates Air France on its new VOR/ILS program which is typical of Air France technical leadership in Europe. We are proud that Collins equipment will contribute to this program.

IN RADIO NAVIGATION AND ILS EQUIPMENT, IT'S . . .

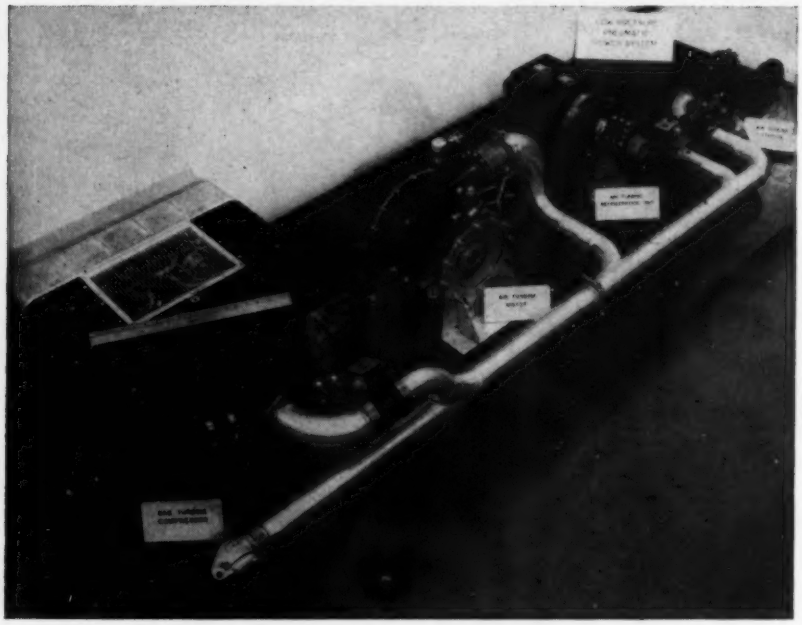
COLLINS

COLLINS RADIO COMPANY, Cedar Rapids, Iowa

11 W. 42nd St., NEW YORK 18

1937 Irving Blvd., DALLAS 2

2700 W. Olive Ave., BURBANK



New Auxiliary Power system for future transports is shown by AirResearch in detail, above. Air, bled from the compressor of the aircraft engine, is used to drive the alternator, producing electric current, and a compressor which produces air for driving the engine starters. Engine air is also used in the turbine refrigeration unit.

Ignition Analyzer Wins Acceptance

TRANSITION of the ignition analyzer from an interesting experimental instrument to a practical everyday tool in use by virtually every type of aircraft engine operator is indicated in the sales record of the unit manufactured by the Scintilla Magneto Division of Bendix Aviation Corp. This is now in use by seven engine manufacturers, eight airframe manufacturers, 13 domestic airlines, 13 foreign airlines, four executive aircraft operators, eleven fixed base operators, the U. S. Air Force, Navy, Royal Canadian Air Force, and several other specialized users.

The wide range of applications is also of interest. In addition to being used in production and experimental engine test cells by the powerplant manufacturers, and by the flight-test sections of the aircraft manufacturers, the Scintilla ignition analyzers are used in portable airborne installations and as fully airborne units. When used as portable airborne units the aircraft is wired for flight use, but the analyzer is only carried on flights when checks are required. In fully airborne installations the analyzer is part of the ship's regular equipment, generally used where there is a flight engineer to run checks during routine operations.

The following list provides an indication of the user applications of Scintilla ignition analyzers.

Engine Manufacturers

(In experimental & production test stands)

Chevrolet Division of General Motors Corp.
Continental Motors Corp.
Ford Motor Company, Airplane Division
Packard Motor Company
Nash Motors
Pratt & Whitney Aircraft
Wright Aeronautical Corp.

Airframe Manufacturers

(Flight Test Section for Experimental and Production Flight Test)

Bell Aircraft Corp. (Helicopter Division)
Boeing Airplane Company
Consolidated Vultee Aircraft Corp.
Fairchild Aircraft Division
Glenn L. Martin Company
Kaiser-Frazer Corporation
Lockheed Aircraft Corp.
North American Aviation, Inc.

Domestic Airlines

American Airlines, Inc.
All DC-6's, Convair—*P. A.*
Chicago and Southern Air Lines, Inc.
TC—Constellations—*P. A.*
Continental Air Lines, Inc.
All Convairs—*P. A.*
Delta Air Lines, Inc.
All DC-4, DC-6—*P. A.*
Eastern Air Lines, Inc.
Have 7 analyzers—Port. use only
Flying Tiger Line, Inc.
DC-4—C-46
Los Angeles Airways, Inc.
Helicopters—*P.*
National Airlines, Inc.
DC-6, DC-6B—*A.*
Northeast Airlines, Inc.
All Convairs—*P. A.*
Slick Airways, Inc.
DC-6—C-46
United Air Lines, Inc.
12 DC-6 *for S. E.*
All Boeing 377's

Foreign Airlines

Aerolinee Italiane Internazionali (Alitalia)
Aktiebolaget Aerotransport (SAS)
British Commonwealth Pacific Airlines, Ltd.
Cat Incorporated (Formosa)
*Compagnie Nationale Air France
T. C.—Leungdoc—Brequet
El Al Israel Airlines, Ltd.
A.—Constellations
KLM Royal Dutch Airlines
A.—DC-6, DC-6B
Lineas Aereas Espanolas (Iberia)
Linea Aeropostal Venesolana (Lav)
National Greek Airlines TAE
*Sabena
Trans-Australia Airlines (TAA)
Trans-Canada Air Lines (Equipment only)

** Have Sperry equipment as well.*

Corporation Aircraft

Arthur Godfrey Productions, Inc.
DC-3 (*A.*) and Navion
AVCO Manufacturing Corp.
First Twin Bonanza installation.
Bendix Aviation Corporation
Pratt & Whitney Aircraft
Convair 340—*A.*

Fixed Base Operators

(Engine Overhaul Test Stands)

Aero Service and Supply Co.
Air Associates, Inc.
Airwork Corporation
Anderson Air Activities
Lockheed Aircraft Service Int'l., Inc.
Mallard Air Service, Inc.
M. Dos Santos, Luanda, Angola, East Africa
Pacific Airmotive Corp.
Burbank
Seattle
Linden
Reeve Alaska Airmotive
Southwest Airmotive Company
E. A. Wildermuth Co., Inc.

Domestic Military

U. S. Air Force
C119—B-29—C-54 *P. A.*
C-97—*A.*
T. C.
U. S. Navy (BuAer)
P4MI—R6D—*A.*
R4Q-1 (C119)—*P. A.*

Foreign Military

Royal Canadian Air Force—*A. & P. A.*
(Bendix used as STD. RCAF Ignition Analyzer)
C47, Canadair North Star, Canadair C5, Lancaster
Bristol Freighter MK 31, Harvard Trainer, Piasecki HUP-1, and Sikorsky H-5

Miscellaneous

A. C. Spark Plug Division (GMC)

A. —Airborne
P.A.—Portable Airborne
T.C.—Engine test cell
P. —Portable use only
S.E.—Service Evaluation

★ ★ CONVAIR IS ADDING ANOTHER 1¼ MILLION SQUARE FEET OF FLOOR AREA TO ITS PLANT FACILITIES...MAKING A TOTAL OF MORE THAN 9 MILLION SQUARE FEET DEVOTED TO RESEARCH AND PRODUCTION PROJECTS FOR AIRCRAFT, GUIDED MISSILES AND ELECTRONICS!

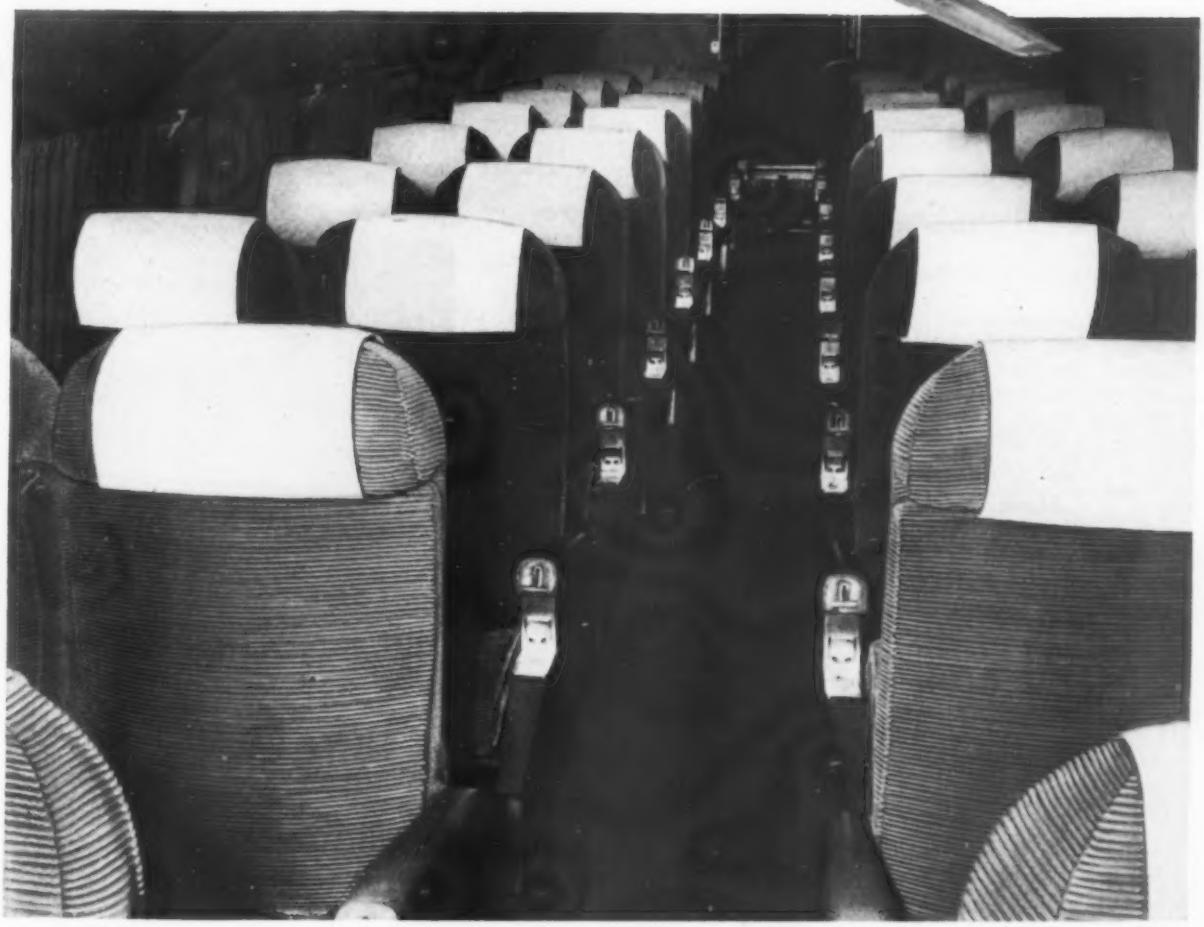
AGAIN EASTERN AIR LINES SELECTS

for New Super Constellations...

Upholstery, carpeting, and draperies of Goodall Fabrics add distinction to Eastern's new 88-seat Super Constellations by Lockheed.

GOODALL *Blended-to-Perform* FABRICS

...for New Silver Falcons

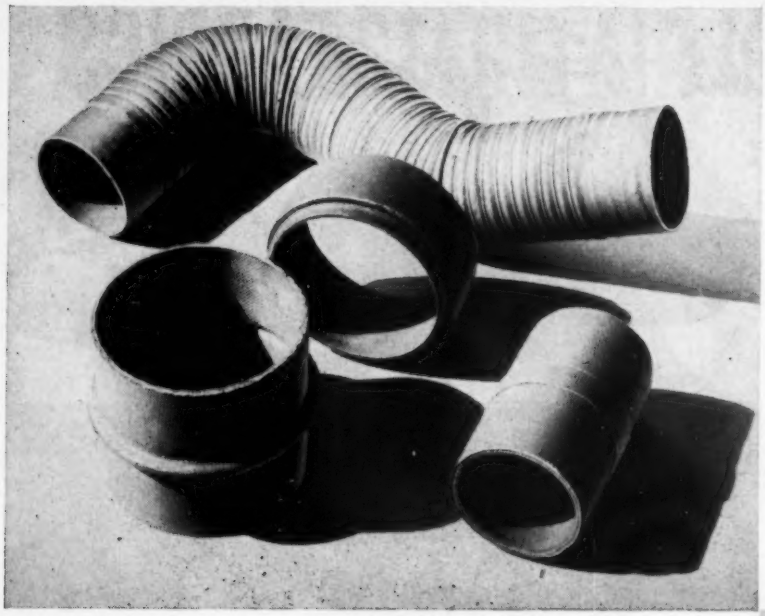


The interior of one of Eastern's new Silver Falcons shows the richness and harmony of a 100% Goodall Fabrics installation.

AIR LINES requirements are blended into Goodall Fabrics! Year after year the results of Goodall's experience with transportation fabrics has helped Eastern maintain its outstanding record of performance and economical operation. Like many other air lines, Eastern has proved through constant use that Goodall Fabrics give major advantages, such as: durability with minimum weight ...easy maintenance... lasting beauty of color and texture.

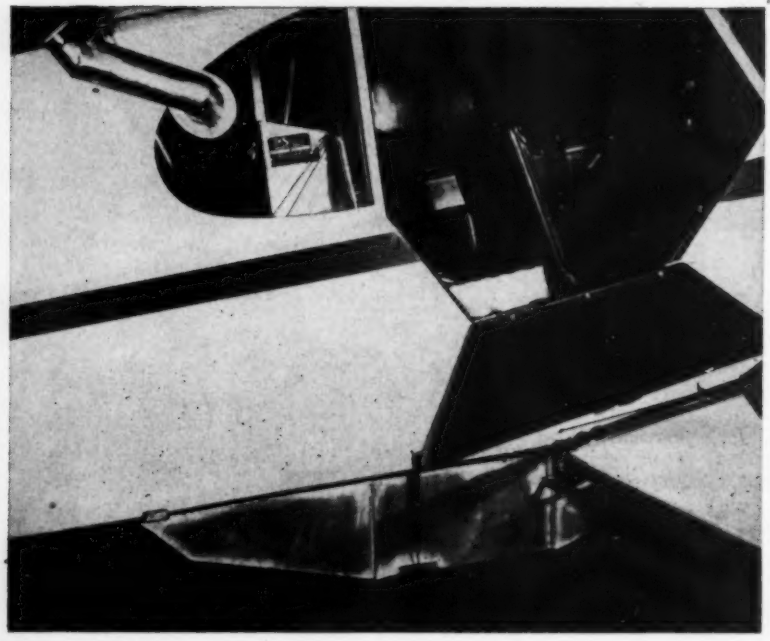
Goodall-fabrics

THE FINEST NAME IN FABRICS



Fiberglass and Rubber. Ducting, sleeves, and couplings made of silicone-rubber-impregnated Fiberglass materials and resistant to both high and low temperatures have been added to the line of Arrowhead Rubber Co., Downey, Calif. Designated ArcoSil No. 2184, the new line is made of material which lends itself to the forming of both simple and complex shapes.

New Comparator. Production comparator offered by Herman Hosmer Scott, Inc., 385 Putnam Ave., Cambridge 39, Mass., is used for repetitive measurement in production testing and research instrumentation. The instrument reads directly the percentage or db difference between two AC voltages, permitting direct and continuous comparison with a single standard unit previously tested by conventional means.



Sprayer and Seat. Sorensen Sprayers has announced a combination seat and belly tank combination sprayer for the Super Cub. Sorensen national sales agency is Dakota Aviation Co., Box 18, Huron, S. Dak. The combination tanks can be installed in one hour, or removed leaving the airplane certificated for other purposes —or the two tanks can be used separately. The combination holds 100 gallons and also provides accommodation for a passenger.

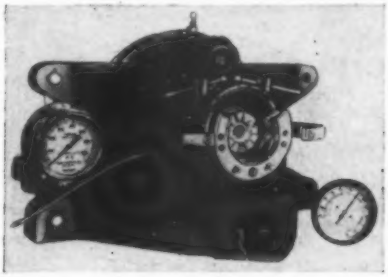
New Products

Identification Device

Metal-Cals, permanent, self-adhesive identification devices developed by Boeing Airplane Co., are now being manufactured by the C & H Supply Company.

Consisting of a .003 inch thickness of aluminum foil, each Metal-Cal is backed with high-tensile-strength bonding material and requires no rivets or other fastening devices. It is quickly applied to any smooth cohesive surfaces. Anodized and dyed, the aluminum foil provides a permanent method of applying operating and maintenance instructions, dial and gauge markings, trade names, diagrams, insignias, etc.

Address: **C & H Supply Co.,** Boeing Field, Seattle, Wash.



Test Bench

Assembly line production has been resumed by Greer Hydraulics on its aircraft engine starter test stand, Model JH-10600. A pony-brake type stand, it permits operational bench testing of starters rated up to 1,500 foot-pounds of torque for either clockwise or counterclockwise rotation.

The unit uses an aircraft-type hydraulic brake to absorb the test load. The torque applied is transmitted by means of a measured arr.. to a sealed-system pressure gauge.

Address: **Greer Hydraulics, Inc.,** 454 Eighteenth St., Brooklyn 15, N. Y.

Electric Blower

Powered by standard generators linked to aircraft motors, new variable-frequency motor-blowers circulate air to enclosed electronic components aboard aircraft.

Developed by American Electric Motors, Inc., the new series of variable-frequency units minimizes stator and rotor losses, thereby delivering maximum performance over a wide frequency range. Rotor diameters are reduced while stator sizes are correspondingly increased.

Deep-slot, open-rotor construction utilizes aluminum die castings.

Address: **American Electric Motors, Inc.,** 4811 E. Anaheim-Telegraph Road, Los Angeles, 22, Calif.

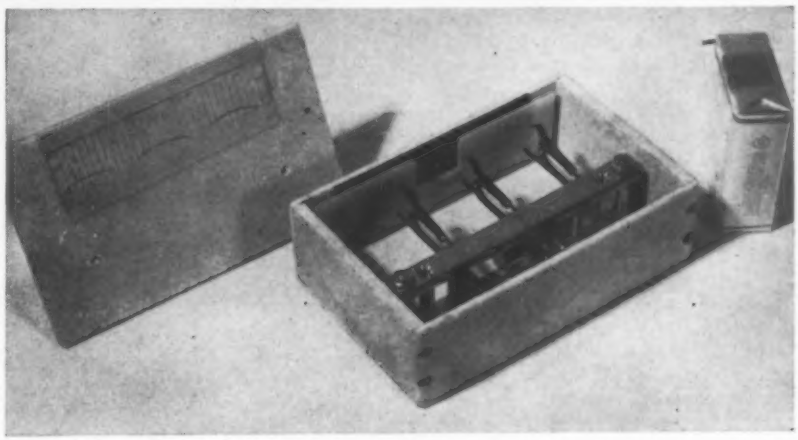
Air-Powered Torque Tool

New air-powered, nut runner torque tool Model MA-25, manufactured by Garvin Brothers, Inc., gives precise torque control in the 0-25 in.-pound range, with special gearing available to extend this range to 40 in.-lbs.

Used on production where too much torque would cause breakage or distortion of light metal parts, castings, or plastics, the tool is used as a gauge to set the desired torque.

Used as any other nut runner, the tool stops automatically when the predetermined torque is reached. Remote-control box reduces weight of hand tool to six pounds, and this light weight can be further offset by standard overhead tool balancer.

Address: **Garvin Brothers, Inc.,** PO Box 536, South Bend 24, Ind.



Three-Way Impact Recorder

New and improved three-way impact recorder has successfully completed three years of laboratory and "field" tests. The Impact-O-Graph Corp., its designer, lists the new features to be a new super-strength, lightweight plastic case; recording stylii affixed to the cover, allowing greater freedom of movement by the stylii and more positive mark on the processed tape; new non-slip tape drive, rigidly controlling the one-inch-per-hour movement rate on tape.

The new instrument also includes earlier features of three individually operating scribe arms for recording impacts from all directions and an electrically operated motor allowing for continuous operation for a minimum of 28 days.

Address: **Impact-O-Graph Corp.,** 1900 Euclid Ave., Cleveland 15, Ohio.

Inspection Process

New penetrant dye inspection process, developed by Met-L-Chek Co., detects flaws in all ferrous and non-ferrous parts, ceramics, glass, and thermosetting plastics, using only two solutions, dye and developer. Met-L-Chek allows for mass visual inspection of parts under normal shop conditions.

Parts are dipped in highly penetrant

red dye solution which penetrates cracks or pores within three minutes. Afterwards, surface dye is washed away with water, leaving dye only in the cracks. Parts are then dipped in the white developer solution, which dries quickly, leaving a white coating to suck the dye out of the cracks. The dye then spreads out, through blotting action, leaving a vivid red stain many times wider than the flaw and visible to the naked eye.

Address: **Met-L-Chek Co.,** 121 North Prairie Ave., Hawthorne, Calif.

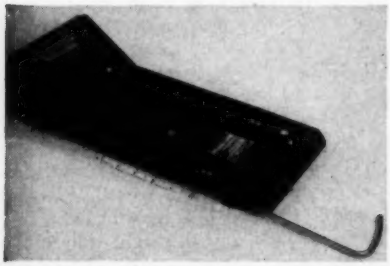
Jet Engine Welding

Syracuse Special Machine Co. is marketing a new positioner for welding jet-engine turbine wheels. In this welding, the bead is laid down on both sides of the wheel in an exactly defined sequence, with the welding area kept at a temperature of 600 degrees F. during the operation.

The Syracuse positioner, the J-47, consists of a cradle which is power-rotated through 180 degrees so that welding can be performed on both sides of the assembly, which is carried on a variable-speed rotating spindle and is enclosed by power-operated insulated doors equipped with ports for welding. Assembly is maintained at 600 degrees by means of gas burners controlled by motor-operated gas valves and with manually operated secondary air valves. A system of electrical controls maintains ignition, firing, and gas pressure.

Welding speed can be varied exactly as required by means of a special heavy-duty, variable-speed gear reducer.

Address: **Syracuse Special Machine Co.,** 4010 Court St., E. Syracuse, N. Y.



Panel Mounting Rack

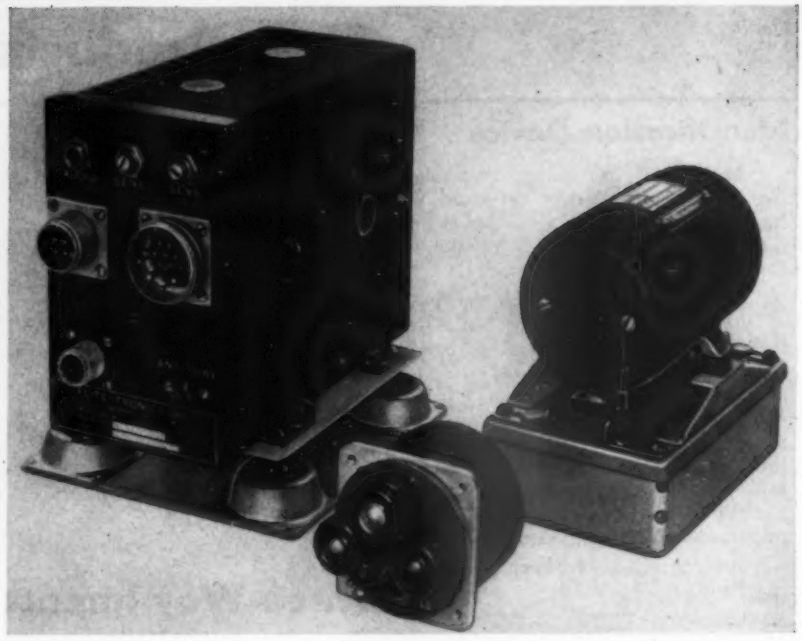
A panel mounting rack, incorporating a mechanism for rapid installation or ejection of control or amplifier panels, has been developed by Westinghouse Electric Corp.

The manufacturer states that the mechanism has greatly reduced the time and effort required to engage connectors, hold the panel securely, and lock it in position, adding only eight ounces to the total one-and-one-half-pound weight of the rack.

The panel is easily disconnected from the rack by an operating handle, which removes a pin projecting through the bottom of the rack. The end of the panel opposite to the connectors is held securely by two powerful inclined springs.

Adaptation of the panel requires only the provision of a hole for pin engagement and two inclined surfaces for spring clip engagement. Mechanism is adaptable to various sizes of racks.

Address: **Westinghouse Electric Corp.,** Aircraft Dept., Lima, Ohio.



Aircraft Marker Receiver

The MB-3 Receiver, manufactured by Flite-Tronics, Inc., is compact and lightweight and reportedly provides accurate detection of either tone or voice-modulated 75 mc signals through aural and visual indications for each of three identifying modulation tones of 2000, 1300, or 400 cps. Adaptable to 12- or 24-volt systems, the MB-3 needs only nominal impedance of 50 ohms.

Its small size and low (seven-lb.) weight make it adaptable to the smallest private aircraft as well as to heavier single- and multi-engine transport aircraft. The receiver meets all specifications as set forth in AN-E-19.

Address: **Flite-Tronics, Inc.,** 3303 Burton Ave., Burbank, Calif.

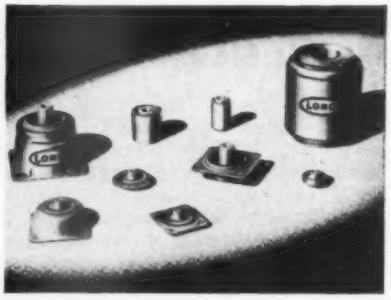
Industrial Coated Fabric

Coverlight, new synthetic-rubber-coated fabric developed by Vulcan Rubber Products, Inc., is being supplied as a protective covering material for wing, engine, and tail-surface covers, as well as baggage tarpaulins and control-surface seals.

Manufacturer states that the outstanding properties of the new fabric are its exceptionally high resistance to tearing, in relation to its weight of approximately five ounces per square yard. Tensile strength also is reported unusually high for so light a weight.

Material will withstand temperatures ranging from 250°F to as low as —65°F. Available in olive drab or orange.

Address: **Vulcan Rubber Products, Inc.,** First Ave. and 58th St., Brooklyn 20, N. Y.



Bonded Silicones

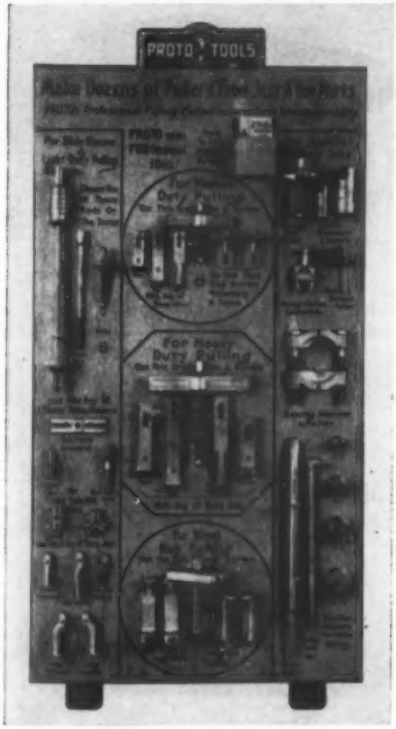
Lord Bonded-Silicones, made by the Lord Manufacturing Co. for both mili-

tary and commercial aviation, have excellent dielectric characteristics, and their chemical stability permits use under most atmospheric and chemical conditions with no danger of decomposition.

Silicone rubber maintains resiliency and provides maximum isolation of shock and vibration at extreme temperatures of —100° F. to +500° F.

Lord Bonded-Silicones are now in service on aircraft nacelle and airborne electronic equipment as vibration-isolation mountings. They are also used as turbojet bearing seals and as commutator spring bumper pads, with other uses still in the experimental stage.

Address: **Lord Manufacturing Co.,** Erie, Pa.

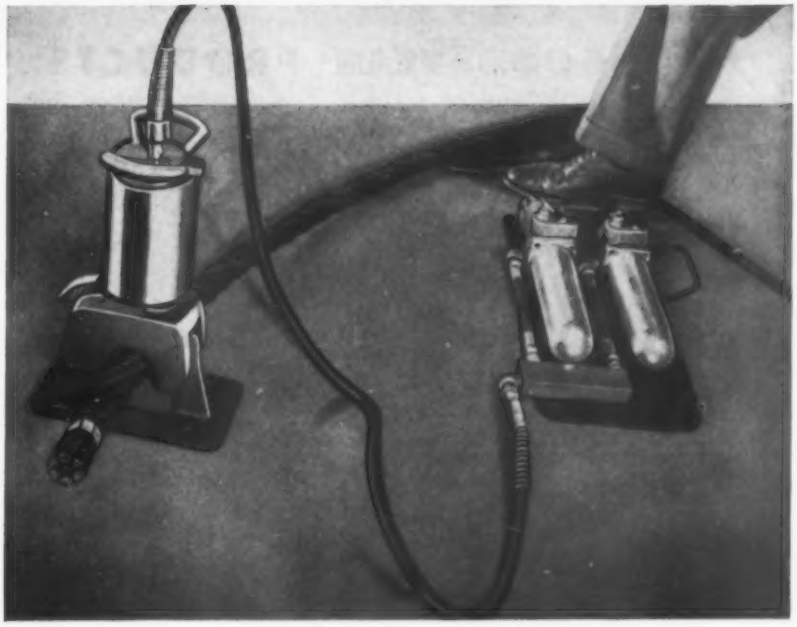


Master Puller Set

PROTO master puller set, called the No. SD6 Pullermart, includes a new type of storage rack. Plomb Tool Co., in designing the new feature, arranged individual parts of basic sets in "exploded" fashion instead of mounting completely assembled sets on the rack. Parts are labeled and located in proper order for assembly. Interchangeable parts can be used in a great many set-ups.

Wide lines divide the 3 ft. by 5½ ft. rack into five sections, enclosing parts for light, medium, or heavy duty, as well as wheel, plus a group of tools for special pulling jobs.

Address: **Plomb Tool Co.,** Los Angeles, Calif.



Wire Rope Cutter Developed

A new latch-type wire rope cutter has been designed by the Manco Manufacturing Co. to supplement the Guillotine line of metal-cutting equipment.

Series 15 Guillotine exerts up to 50 tons thrust, making a clean cut through up to 1/34 in. wire rope. Easy to operate, the latch quickly opens the anvil, and material to be cut is laid in position. The main body of the tool is raised back to vertical position, which automatically locks tool in cutting position. Depending on pump assembly used, cutting time as little as seven seconds can be obtained.

Address: **Manco Mfg.,** Bradley, Ill.

Safety Equipment Cleanser

Faceshields, respirators, mask facepieces, ear defenders, and clothing can be cleaned and sanitized thoroughly and quickly according to the Mine Safety Appliances Co., manufacturer of the new MSA Cleaner-Sanitizer.

Easily stored, safe, and convenient to handle, the Cleaner-Sanitizer is in dry powder form, 25 one-ounce envelopes to a carton. The user simply adds an ounce of powder to a gallon of lukewarm water. After equipment is cleansed, rinsed, and allowed to air-dry, no soap film remains, and bacterial count is reduced to levels judged safe by public health standards, the manufacturer reports.

Address: **Mine Safety Appliances Co.,** Braddock, Thomas and Meade Sts., Pittsburgh 8, Pa.

Flexible Coupling

Flexible coupling capable of withstanding pressures in excess of 375 psi and temperatures from —65 degrees to 460 degrees F on fuel and oil lines is being produced by E. B. Wiggins Oil Tool Co.

Coupling can be misaligned as much as three degrees without leaking, and tube ends permit separation as much as a half inch without effecting sealing. Metal retainer absorbs end loads, preventing stress on the sealing members. Standard AF 934 "O" rings are used.

Address: **E. B. Wiggins Oil Tool Co., Inc.,** 3424 E. Olympic Blvd., Los Angeles, Calif.

VHF Transmitter

Being marketed by Air Communication Co. is a VHF transmitter for plane-to-control tower and range-station use, over a radius of up to 75 miles. New model 300A is designed to be used with any low-frequency radio receiver. It provides six-channel, crystal-controlled communication with a frequency stability of ± .01%. The trans-

mitter weighs 2½ pounds and is furnished with power and antenna cables, antenna line in relays, and installation data.

Address: **Air Communication Co.**, 23 Main St., Hackensack, N. J.

Marking Machine

A new marking machine which makes it possible to mark safety and parking lines within one-eighth of an inch of curbings, buildings, fencing, and posts has been developed by the H. C. Sweet Co. Without a motor or attachments, it operates on the same gravity-feed principle as the standard Florline model, making lines at walking speeds almost flush with partitions, safety islands, etc. The brush can be raised to retrace a line by lifting the hand, make skip lines, or roll to other areas without lifting the machine. The new Florline-X can be operated by one man using one hand.

Paint flow is adjustable to accommodate the operator and the job by pistol-grip trigger control. Leakproof machine holds 1½ gallons of paint, lacquer, or whitewash. This is enough for approximately 1,200 feet of four-inch line. Retail price is $98.75 FOB Detroit.

Address: **H. C. Sweet Co.**, 12,083 Woodbine Ave., Detroit 28, Mich.

Reinforced Plastic Tubing

New lightweight, strong, corrosion-resistant reinforced plastic tubing developed by the Reflin Co. can often be substituted for materials on short supply, according to the manufacturer. Applicable for housings of airborne equipment and components, portability makes it practical for fuel-dispensing lines. The Navy has found plastic pipe a substitute for cooper nickel and copper brass.

Available in standard sizes from 4 to 10 in. O.D., with wall thicknesses ranging from .030 in., Reflin has a tensile strength up to 35,000 psi and a flexural strength up to 65,000 psi. Varying with diameter and reinforcement, burst pressures range to 3,000 psi.

Address: **Reflin Co.**, Dept. B-11, 5825 Higuera, Culver City, Calif.

HALLIBURTON CASE (left, above) withstood 5,010 lbs. in diagonal corner load test before locking pins sheared and hinge sprang. Side load test on Halliburton (right, above) did not show permanent deformation until 1,250 lbs.

How Manufacturers Handle Airline Luggage

More durable materials and easier-stowage designs are being created by constant research.

A FEW weeks ago, AMERICAN AVIATION asked 10 top airline traffic and sales executives for their comments on the "baggage smashing" problem. They all admitted the seriousness of the problem, but knew of no research that had been conducted to determine what types of luggage might be suitable for air travel and what types might not stand up. Some recommend types of luggage to their passengers, others don't.

Luggage manufacturers were quick to send in their comments on the article, "What Luggage Stands Up Best in Air Travel?" (AMERICAN AVIATION, March 31). The comments showed:

- The manufacturers have individual opinions on what type of luggage is best for air travel—some favor soft-sided bags, some rigid; covers vary from cowhide to plastic to rawhide to aluminum.
- They have done considerable research and testing to determine the suitability and strength of their products. Some have run tests in cooperation with airlines.

Several pointed out that three years ago the National Bureau of Standards issued a report entitled "Laboratory and Service Tests of Hand Luggage" (Miscellaneous Publication 193, available from Superintendent of Documents, Washington, D. C., 15c a copy). The report establishes certain tests which can be used on luggage—drop tests, handle tests, etc. NBS service tests were conducted mostly with railroads and bus companies, with almost no airline participation.

The Manufacturers Reply:

J. W. Murphy, assistant sales manager, Earle P. Halliburton Co., Los Angeles, Calif.

Your article . . . is the first straightforward, no-holds-barred approach to this troublesome problem that it has been our pleasure to read . . .

We feel, as does Mr. Walter Sternberg of National Airlines, that all three industries concerned with air travel—airlines, luggage manufacturers and aircraft manufacturers—should share the responsibility of this sore spot in air travel.

We, as manufacturers of the Halliburton Aluminum Travel Case, firmly contend that our travel case has been the most satisfactory contribution toward reduction of airline luggage damage claims since the inception of passenger aircraft. The greater majority of the replies to your inquiry confirm our contention . . .

The engineering, machinery, tooling and materials represented in our product are not the result of overnight planning, nor are they conventional in the luggage industry. They are the result, however, of a planned study of requirements in luggage suited to today's rapid transit systems . . .

We have sent word to Mr. Lipscomb of Pan American that we are still very much in business!

(Mr. Murphy enclosed a copy of extensive tests conducted on two Halliburton models by Triplett & Barton Inc., Burbank, Calif. In a static side load test, for example, a wooden loading block five inches square was placed in the center of a case. The case withstood 1,100 lbs. pressure before slight permanent deformations were noted along the top side. At 1,290 lbs., one of the clasps opened. Tests were also conducted on ends, tops, corners, handles and hinges.

(Halliburton cases, acording to the company's literature, are built of aluminum alloy, resistant to mechanical or thermal shock, impervious to moisture, grease and stain. The shell itself is reinforced by a heavy alloy rim welded in place. Inside each corner are special shock plates. "Special heat-treating makes a Halliburton a scientific oddity; it actually increases in strength with age."—Ed.)

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Rena Churgin, publicity director, Amelia Earhart Luggage, Newark, N. J.

It may interest you to learn of the proposed sizes of luggage recommended to the luggage industry. For baggage to be carried in the passenger cabin or placed in an upper berth, measurements are 18″ x 13″ x 6″ and 26″ x 15″ x 8″. The maximum measurements for a bag that would be carried in the plane's luggage compartment approximate 29″ x 20″ x 9″.

George H. Estill, supervisor of cargo service procedures of United Air Lines, reported the following to us (we have since come out with a soft-side cowhide two-suiter which qualifies highly from every standpoint):

"It is our experience that the two-suiter is a highly satisfactory unit from the handling and stowing standpoint. The size of this bag is near the maximum that may be lifted easily and its oblong shape with flat sides permits fast and efficient stowing.

"We would suggest, however, that

COWHIDE SOFT-SIDED two-suiter, made by Amelia Earhart Luggage.

a bag of this type be built of plywood over a steel frame and that it should be covered with leather rather than fabric. Space restrictions within the cargo compartments make it necessary for us to stack baggage. Therefore, a stout frame and rigid sides are very desirable. While a leather covering scratches more easily than fabric, it does not rip the way fabric does, and therefore seems more durable in the long run.

"Our experience with the 'Valpack, B-4' bag and luggage of this type has not been good. Baggage with divided handles is invariably damaged when one of the handles is torn loose. Baggage of the Gladstone-type and smaller sizes of grips are not designed for easy stowage. This fact alone accounts for much of the damage that is done to them."

(Company sales literature states that the soft sides two-suiter, weighing 11 lbs. and selling for $95 plus tax, has solid cowhide sides, built on steel frames. It is built with braided thread, locked stitches, solid rivets, "cushion-edge" bindings, and has four hinges.

(Advantages claimed for Amelia Earhart luggage: plywood withstands more than 1,300 lbs. pressure in a puncture test; the cowhide outlasts "ordinary skins" in abrasion tests; tensile strength of thread used is over 16 lbs. over twice that of "ordinary" thread).

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Emmett H. Heitler, general manager, Shwayder Brothers Inc., Samsonite Luggage Division, Denver, Colo.

We have read with interest your article entitled, "What Luggage Stands Up Best in Air Travel?" We are especially interested in the comment, "no research has ever been conducted" with regard to this matter.

For quite some time we have been running controlled tests of our luggage and other makes of luggage in connection with United Air Lines, and believe that we have accumulated considerable data with regard to the luggage problem on the airlines. In many instances we went so far as to pack a recording instrument inside the case which recorded on a tape the amount of shock received by the piece of luggage and the time that this shock occurred, so that we could check back by the flight log and determine exactly the conditions under which the luggage traveled.

As a result of this research and other experiments, we have constantly improved the covering material and binding of our Samsonite luggage and at the present time are working on a completely new design that will be the first scientifically designed luggage for air travel that has probably ever been

attempted. Due to current conditions, however, it may be a year or two before this new product is available.

In addition to this, we have set up a program with the adjustment departments of the various airlines, so that they can make prompt and complete low-cost replacements in case of any damaged Samsonite goods.

Furthermore, we have set up repair stations in almost every major city in America where trained men are able to make necessary repairs on Samsonite. In general . . . we stand ready to be of whatever service possible.

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William Simon, Portland Luggage Co., Portland, Ore.

I read with great interest your article regarding breakage and the different criticisms offered by officers of numerous airlines.

To my utter surprise, I found that the men offering their opinions were so poorly informed as to the relative merits of luggage in regard to wear, that I took it upon myself to write and let you know a dealer's version thereof.

Luggage is divided into two categories—hard-sided and soft-sided. Both have their place in our present-day means of travel. Because ladies' luggage is always built on the so-called hard-side frame, the only thing you have to be careful of in buying is the fabric or leather in which it is covered.

We found from experience that covering similar to the one used by Samsonite was the one that gave the best wear. There are several companies using different types of colors, finishes, etc., but they are all basically alike and whether they are made by Samsonite, Belber, Skyway, or any other manufacturer using that raw material, they will all have the same wear. The risk of the cases breaking is the same regardless of who made them, for they have the same type veneer box under the covering.

The mens' luggage is where I found your critics way off beat. Good mens' luggage will outlast womens' luggage tenfold if properly handled. The prime requisite is soft-side construction, and the leather must be at least in the five to six ounce class as far as thickness goes.

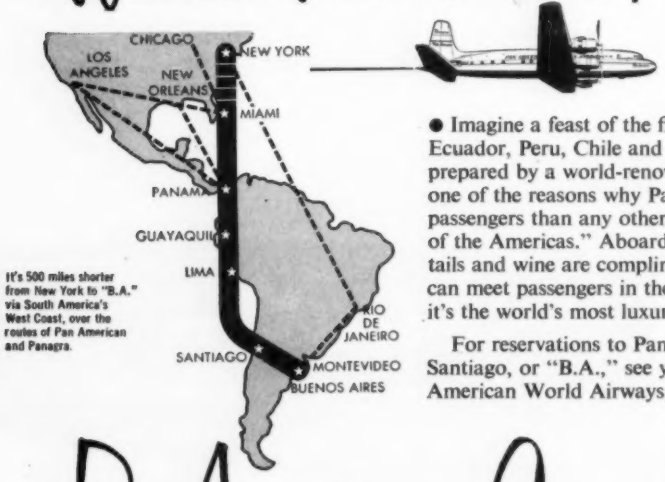
This combination together with the steel frame that generally accompanies soft-sided bags, is by far the most practical. The one important thing that most men forget is to put canvas covers on their soft-sided bags, for that is what will prevent almost all scuffing. There just isn't anything to wear out in the above-type bag, and I defy any authority to say otherwise.

(Additional manufacturers' comments will appear in the May 26 issue.)

Fresh-water shrimp, tree-ripened avocado pears, superb Chilean wine . . . perfection *. . . served to you from the Gourmet Galley*

You have wonderful things to eat on your way to South America with the—

"World's Friendliest Airline"



It's 500 miles shorter from New York to "B.A." via South America's West Coast, over the routes of Pan American and Panagra.

● Imagine a feast of the finest delicacies in Ecuador, Peru, Chile and Argentina—artfully prepared by a world-renowned chef and you'll see one of the reasons why Panagra carries many more passengers than any other airline on the "Avenue of the Americas." Aboard *El Inter Americano*, cocktails and wine are complimentary with meals. You can meet passengers in the "Fiesta Lounge." Truly, it's the world's most luxurious DC-6.

For reservations to Panama City, Guayaquil, Lima, Santiago, or "B.A.," see your Travel Agent or Pan American World Airways, U. S. Sales Agent for—

Pan American–Grace Airways

Airline Commentary

By Eric Bramley

COMMENTARY on present-day air terminals: Delta Air Lines ticketed an elderly lady in Knoxville for a flight to Des Moines via Chicago. The lady, in seemingly good health, requested a wheel chair for use in Chicago. The Delta agent asked if she would need any assistance in boarding the flight. "Oh, I'm not crippled," she replied. "You see, it's such a long walk over to the United counter that I don't wish to exhaust myself." She got her wheel chair.

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A pat on the back to Capt. John Lien of TWA, who flies between Los Angeles and Albuquerque via Las Vegas, for always giving his passengers a good close-up view of the Grand Canyon when weather permits. Wayne W. Parrish, our editor and publisher, who was traveling to the recent A-bomb detonation in Nevada, reports: "On my trip the other day, Capt. Lien zig-zagged over the Canyon during its whole length so passengers on each side of the plane could get a good view, then flew over Boulder Dam and banked so everyone could see." Excellent public relations.

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It's our sad duty to report that there's a revolt on in the South against the new phonetic alphabet now in use—A for Alfa, B for Bravo, etc., replacing A for Able, B for Baker, etc. We have a mimeographed sheet, listing this alphabet that was distributed to pilots of Southern Airways. Only trouble is that the letter Y has been completely eliminated. Our informant points out that Y is for Yankee, and that in the South, suh, they insist that that word should start with a D.

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While in Cincinnati recently, we spent some time with Charlie Startup, American Airlines' local sales manager. Noticing that Charlie had his right hand heavily bandaged, we inquired about it. "I'm glad you asked that," he said, handing us a card upon which was printed the following: "Thanks for asking about my hand. I burned it putting out a fire in my house. It is coming along fine now. Perhaps you will be interested to know that American Airlines is burning up the airways today and carrying more passengers and cargo than ever before."

What won't those salesmen think of next?

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Strange requests are often made of reservations agents. Here are two recent ones that have come our way: **Harold Aebi,** TWA agent in Los Angeles, had to read almost the entire manual to an elderly lady who was having her late husband's body flown East for burial—and insisted that she accompany him on the family plan. And a Chicago and Southern agent in New Orleans was asked by a Constellation passenger: "I'd like to try out your cargo carrier service personally, so would you change my reservation from the cabin to the Speedpak?"

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An American Airlines scoop: Passengers on AA's Los Angeles-Chicago Flight 30 on Apr. 22 had good seats for the atom bomb blast in Nevada. They saw it clearly from 19,000 ft. 70 miles away, with commentary by Capt. Lou Marable. AA believes Flight 30 was the only commercial plane flying that close to the blast. The flight was cleared by military authorities, who said there was no danger in flying the route.

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The new *SAS Bulletin,* being published for employes of Scandinavian Airlines System, is indeed a unique house organ. SAS was faced with language difficulties, because its workers come from the three Scandinavian countries, plus others. So it is issuing, every other month, a house organ in four languages—Danish, Norwegian, Swedish, and English. First one of its kind we've seen. Know of any others?

1951 AIRLINE SALARIES

Following are 1951 airline salaries as reported to CAB:

Trunk Carriers

American Airlines, Inc.

C. R. Smith, pres. and dir., $49,482 salary (down $518), $2,051 bonus and indirect compensation; **O. M. Mosier,** v.p. and dir., $32,792 salary (up $2,792), $1,653 bonus and indir.; **R. E. S. Deichler,** v.p., $32,792 salary (up $2,792), $812 bonus and indir.; **L. G. Fritz,** v.p., $32,792 salary (up $2,792), $1,653 bonus and indir.; **William J. Hogan,** v.p. and treas., $32,792 salary (up $2,792), $1,207 bonus and indir.; **William Littlewood,** v.p., $25,833 salary (down $4,167), $1,382 bonus and indir.; **C. W. Jacob,** v.p., $32,792 salary (up $5,292), $969 bonus and indir.; **R. W. D. Smith, Jr.,** v.p., $23,896 salary (up $1,396), $1,074 bonus and indir.; **G. J. Brandewiede,** v.p., $26,396 salary (up $3,896), $1,236 bonus and indir.; **G. K. Griffin,** v.p., $18,621 salary (up $3,225.37), $637 bonus and indir.; **Carlene Roberts,** v.p., $27,792 salary (up $2,792), $1,216 bonus and indir.; **W. H. Johnson, Jr.,** secy., $14,563 salary, $257 bonus and indir. (entered office May, 1951); **P. G. Larie,** comptroller and asst. treas., $16,838 salary (up $838), $828 bonus and indir.; **T. L. Boyd,** asst. v.p., $20,478 salary (up $20,478), $574 bonus and indir.; **G. E. Markt,** asst. v.p., $11,647 salary (up $1,347), $407 bonus and indir.; **C. R. Speers,** asst. v.p., $20,000 salary (up $2,000), $605 bonus and indir.; **M. Whitlock,** asst. v.p., $15,963 salary (up $1,689.95), $336 bonus and indir.; **L. E. Glasgow,** asst. comptroller and asst. treas., $15,838 salary (up $2,788), $584 bonus and indir.; **V. J. Long,** asst. secy. and asst. treas., $14,338 salary (up $838), $495 bonus and indir.; **W. L. McMillen,** asst. secy. and asst. treas., $15,000 salary (up $1,500), $455 bonus and indir.; **A. A. Paradis,** asst. secy., $9,558 salary (up $1,308), $220 bonus and indir.; **A. R. Bone, Jr.** regional v.p., $14,463 salary (up $2,088), $448 bonus and indir.; **W. N. Bump,** regional v.p., $14,463 salary (up $2,088), $424 bonus and indir.; **T. P. Gould,** regional v.p., $14,578 salary, $589 bonus and indir. (entered office May 16, 1951); **S. G. King,** regional v.p., $14,463 salary (up $2,088), $609 bonus and indir.; **M. D. Miller,** regional v.p., $14,463 salary (up $963), $638 bonus and indir.

Caribbean Atlantic Airlines, Inc.

Dionisio Trigo, pres., $12,500 salary (up $2,500); **Benigno Trigo,** v.p., $4,750 salary (up $1,250); **Frank H. Sheldon,** v.p. traffic, $8,550 salary (up $150); **Jose M. Sierra,** v.p. operations, $10,750 salary (up $600.04); **L. A. Lockhart,** treas., $7,950 salary (up $150); **Adolfo Valdes,** secy., no salary.

Chicago and Southern Air Lines, Inc.

Carleton Putnam, chairman of board and dir., $19,666.67 salary (down ($4,333.31), $350 bonus and indirect compensation; **Sidney A. Stewart,** pres. and dir., $34,333.33 salary (up $2,333.33), $350 bonus and indir.; **Junias H. Cooper,** v.p. finance and dir., $18,666.67 salary (up $666.67), $300 bonus and indir.; **William T. Arthur,** v.p. operations, $18,166.66 salary (up ($666.66); **Richard S. Maurer,** v.p., secy. and general counsel, $14,666.67 salary (up $1,000); **Thomas M. Miller,**

v.p. traffic and sales, $13,666.66 salary; **William T. Beebe**, v.p. personnel, $13,666.66 salary; **Thomas F. Hambleton**, treas., $8,125 salary (up $641.67); **Robert S. Scrivener**, asst. treas., $5,160 salary; **Erma Murray**, asst. secy., $4,680 salary.

Colonial Airlines, Inc.

Sigmund Janas, Sr., pres. and dir., $13,000 salary (down $5,000—represents total 1951 salary paid regardless of position held, term expired June 30, 1951); **Edward S. Ridley**, v.p., $5,599.97 salary (down $6,399.91—term expired April 18, 1951); **James F. Gormley**, treas., $12,499.87 salary (up $499.99); **Warren S. Cooper**, secy., $6,520.85 salary (down $2,104.15 term expired August 31, 1951); **Branch T. Dykes**, v.p. operations and dir., $16,000 salary (up $1,000); **Sigmund Janas, Jr.**, v.p. traffic, $11,999.88 salary (term expired August 31, 1951); **Alfred M. Hudson**, v.p. adv., $11,999.88 salary (represents total 1951 salary paid regardless of position held, term expired September 4, 1951), $1,000 bonus and indir.; **L. Orville Cameron**, v.p., secy., $7,583.33 salary (term began June 1, 1951); **Alfons B. Landa**, pres. and dir., $6,533.33 salary (term began May 24, 1951); **Robert H. Herrnstein**, v.p.-comptroller, $7,604.30 salary (term began May 28, 1951); **Norman D. MacDonald**, asst. treas., $5,872.50 salary; **Thomas J. Dunnion**, chief acctg. off., $15,000 salary (represents total 1951 salary paid regardless of position held, term began July 12, 1951); **John J. Murphy**, chairman of executive committee and dir., $3,500 (term began June 1, 1951); **Stanley Meyer**, dir., $3,000 salary (down $4,500, term expired April 18, 1951).

Delta Air Lines, Inc.

C. E. Woolman, pres., gen. mgr. and dir., $30,000 salary (up $5,500), $38 bonus and indirect compensation; **C. E. Faulk**, chairman of board and dir., $8,000 salary (down $4,000—deceased August 8, 1951); **Charles H. Dolson**, v.p. operations, $20,000 salary (up $3,667), $38 bonus and indir.; **Laigh C. Parker**, v.p. traffic and dir., $21,000 salary (up $2,750), $38 bonus and indir.; **L. B. Judd**, comptroller and asst. secy., $13,542 salary (up $2,600.33), $38 bonus and indir., (deceased December 26, 1951); **Travis Oliver**, treas. and dir., $1,200 salary; **C. H. McHenry**, secy. and dir., $1,200 salary; **Catherine Fitzgerald**, asst. treas., $4,800 salary (up $550), $38 bonus and indir.

Eastern Air Lines, Inc.

E. V. Rickenbacker, pres. and dir., $50,000 salary, $13,022.37 bonus and indirect compensation; **P. H. Brattain**, 1st v.p. and dir., $30,000 salary (up $416.68), $6,626.41 bonus and indir.; **S. H. Shannon**, 2nd v.p. and dir., $27,500 salary (up $416.76), $4,877.92 bonus and indir.; **T. F. Armstrong**, secy., treas., and dir., $20,000 salary (up $416.76), $3,816.22 bonus and indir.; **J. W. Moore**, asst. secy. and treas. and dir., $11,250 salary (down $3,250, resigned September 30, 1951), $1,468.68 bonus and indir.; **L. P. Arnold**, v.p., $22,500 salary (up $833.36), $3,402.07 bonus and indir.; **M. M. Frost**, v.p., $25,000 salary (up $416.80), $2,628.24 bonus and indir.; **C. Froesch**, v.p. $10,550 salary $1,883.80 bonus and indir. (elected May 4, 1951); **J. H. Brock**, v.p., $17,500 salary, $2,147.22 bonus and indir. (elected May 4, 1951); **W. Van Dusen**, v.p., $13,750

salary (elected Jan. 19, 1951); **W. R. Blackwood,** comptroller, $2,000 salary (elected September 28, 1951); **T. E. Creighton,** asst. secy., $7,625 salary, $503.90 bonus and indir. (elected September 28, 1951); **F. L. Farley,** asst. treas., $9,774.93 salary, $1,005.98 bonus and indir. (elected September 28, 1951).

NOTE: Bonus and indirect compensation includes directors' fees and retirement plan contributions.

Hawaiian Airlines, Ltd.

S. C. Kennedy, pres. and dir., $28,250.04 salary (up $723.23), $240 bonus and indirect compensation; **Ford Studebaker,** v.p., $15,750 salary (up $1,640.79); **David Watson,** v.p., treas., $13,250.04 salary (up $2,099.15; appointed v.p. March 22, 1951); **John S. Pugh,** secy., $9,320 salary; **Brian Cooke,** asst. treas., $8,241 salary (up $1,000.04).

Pan American World Airways, Inc.

J. T. Trippe, pres. and dir., $23,125 salary (up $1,459), $1,850 dir. fee; **S. F. Pryor,** v.p., asst. to pres. and dir., $26,042 salary (up $42), $12,000 bonus and indirect compensation and $2,150 dir. fee; **H. M. Bixby,** v.p. and dir., $13,042 salary (up $42), $5,000 bonus and indir., $1,600 dir. fee; **H. J. Friendly,** v.p., gen. counsel and dir., $25,083 salary (up $83), $12,000 bonus and indir., $900 dir. fee; **J. C. Leslie,** v.p. and dir., $23,208 salary (up $708), $7,500 bonus and indir., $1,200 dir. fee; **F. Gledhill,** v.p. and dir., $25,083 salary (up $1,039), $12,000 bonus and indir., $1,100 dir. fee; **E. Balluder,** v.p., $24,042 salary (up $2,909), $10,000 bonus and indir.; **J. H. Towers,** v.p. $20,000 salary, $5,000 bonus and indir.; **A. P. Adams,** v.p. $5,750 salary, $2,500 bonus and indir. (elected October 2, 1951); **R. B. Adams,** v.p. $8,333 salary, $2,500 bonus and indir. (elected August 1, 1951); **W. G. Lipscomb,** v.p. traffic and sales, $22,875 salary (up $2,787), $9,000 bonus and indir.; **A. A. Priester,** v.p., and chief eng., $20,000 salary, $5,000 bonus and indir.; **J. S. Woodbridge,** comptroller, $18,875 salary (up $875), $7,000 bonus and indir.; **R. G. Ferguson,** treas., $18,583 salary (up $1,083), $7,000 bonus and indir.; **H. P. Morris,** secy. and gen. attorney, $13,042 salary (up $42), $2,500 bonus and indir.; **W. L. Morrison,** v.p. LAD Div., $24,042 salary (up $1,954), $10,000 bonus and indir.; **H. E. Gray,** v.p. Pac-Alas. Div., $22,875 salary (up $2,787), $9,000 bonus and indir.; **H. R. Harris,** v.p. Atlantic Div., $25,000 salary (up $18,403), $9,000 bonus and indir.; **C. M. Young,** v.p., $20,042 salary (up $4,165), $4,000 bonus and indir.; **A. M. Archibald,** asst. v.p. and asst secy., $12,542 salary (up $292), $4,000 bonus and indir.; **H. H. Berke,** asst. v.p., $17,042 salary (up $998), $5,000 bonus and indir.; **J. C. Cone,** asst. v.p., $15,042 salary (up $42), $5,000 bonus and indir.; **W. J. McEvoy,** asst. v.p., $12,000 salary; **J. D. Fenton,** asst. v.p., $16,042 salary (up $1,331), $4,000 bonus and indir.; **A. Hiatt,** asst. comptroller, $11,000 salary, $1,500 bonus and indir.; **R. P. Monson,** asst. treas., $13,042 salary (up $1,042), $3,500 bonus and indir.; **G. Titsworth,** asst. treas., $4,922 salary (up $2,547, resigned June 30, 1951); **E. G. Rothrock,** asst. secy., $8,300 salary (up $500), $750 bonus and indir.; **J. J. Cantwell,** asst. secy., $7,389 salary (up $389), $500 bonus and indir.

When CAB Separates Foreign Mail Pay

NAL case occasions policy statement; overseas operations must be large, independent of domestic routes.

PROPOSAL to establish a subsidy-free rate of 53c per mail ton-mile for National Airlines' domestic and international system served as a spring-board for CAB last week to set out criteria for determining when international and domestic systems should be separated for rate-making purposes.

In National's case, CAB viewed the carrier's Havana route as a "stub-end" operation which should be integrated with the domestic system for mail rate purposes. But in recent cases involving Chicago and Southern Air Lines and Braniff Airways, Board treated the domestic and international systems separately.

In the C&S case, CAB refused to offset domestic earnings against international losses and the Post Office Department has taken the case to the U. S. Court of Appeals.

Drawing the Line

Where to draw the line presents an acute problem in many cases and these general principles were set out to "establish grounds for separate treatment."

- **Foreign operations must be large** relative to the domestic operations of the carrier;
- **Foreign operations must be so large** that it would be neither practical nor feasible to attempt to set a system rate;
- **Domestic and foreign operations must be carried** on more or less independently of each other.

CAB pointed out that "it is obvious that none of these criteria can be applied with mathematical precision. They are in the nature of guideposts that will point out the way in which the objectives of the Act can best be attained. Neither are these considerations exclusive."

But, the agency said, "it is anticipated that consistent with the treatment accorded National's foreign operations in this case, other 'stub-end' operations will be considered as part of the domestic operations for rate-making purposes."

Importance of the system separation policy is perhaps best illustrated in the Chicago & Southern case. If C&S' domestic and international routes were considered as one for mail rate purposes, profits derived from the domestic services last year and not mail pay would be used to underwrite losses of the international operation.

Such an occurrence CAB views as a deterrent to C&S' ability to achieve a self-sufficient status domestically in the near future. This would also apply to other carriers similarly situated.

Proposed subsidy-free rate for National would apply from January 1, 1952. On a temporary basis, National has been receiving 53c since last July. But the new Board proposal contemplates a final rate and should serve as a precedent in future cases involving the system-separation question.

PAA, TWA Hold Firm On Atlantic Routes

Basic positions adopted by Pan American and TWA at the beginning of procedural steps in the North Atlantic Renewal Case prevailed in final briefs to the Civil Aeronautics Board as the parties readied for oral argument scheduled for early May.

Pan Am reasserted its preference for a continuation of the current route pattern with certificates to be renewed on either a temporary or permanent basis. TWA continued to emphasize its need for a permanent certificate and realignment of the route pattern in the interests of "area competition."

Following oral argument the case will then go before CAB for decision and to the President for his approval. Current temporary certificates expire July 4, 1952. CAB Chief Examiner Francis W. Brown has recommended permanent renewal of basic trans-Atlantic certificates of Pan Am and TWA but little in the way of route adjustments.

Federal Court Asked To Revoke Stay Order

U. S. Court of Appeals for the District of Columbia Circuit has been asked to vacate its stay order which prohibits inauguration of southern transcontinental interchange service by Eastern, Braniff and TWA. CAB, the three interchange partners and eight cities petitioned the Court in opposition to National Airlines' claim that the service would do "irreparable damage."

National successfully blocked inauguration of the service when, on April 10, it secured the Court order staying CAB's approval of the service. Carriers planned to start the operation on April 14.

In their documents for lifting the stay, the parties argued that:

- **National was afforded** full and fair opportunity to contest issues before CAB;
- **Serious injury to the public interest** will result from the stay;
- **National has not shown good cause** for delaying the service "having failed to show irreparable injury."

An answer was slated to be filed by National at press-time after which the Court will weigh all matters and issue another ruling. If the Court upholds its original stay, the interchange may not begin until Court review of the entire CAB proceeding leading up to the interchange approval.

Decisions

- **Los Angeles Airways** petition for new mail rates dismissed for alleged failure to make "even a *prima facie* showing that current rates are unreasonable." Certain adverse circumstances accented by damage to its new Sikorsky S-55 prompted the LAA rate request. CAB indicated it may vacate its dismissal upon submission of "more detailed economic justification for a new rate."
- **Scandinavian Airlines System** awarded new foreign air carrier permit to reflect a new Consortium Agreement between Danish Airlines, Norwegian Airlines and the Swedish company A. B. Aerotransport.
- **United Air Lines and Chicago and Southern Air Lines** denied reconsideration of CAB order which prohibited their intervention in Braniff/Mid-Continent Merger Case.

Examiner's Reports

Examiner Barron Fredericks recommended that CAB deny application of Civic Memorial Airport Authority for service of Ozark Airlines to Alton-Wood River, Illinois.

CAB CALENDAR

May 13—Hearing in Texas Local Service Case. Dallas, Texas. Docket 3248.

May 15—Oral argument before the Board in Robinson Airlines Renewal Case. Washington. Docket 4947 et al.

May 26—Hearing in Southern Airways Renewal Case. Tentative. Docket 5199.

June 2—Hearing in Capital-Northwest Merger Case. Tentative. Docket 5396.

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SUMMARY OF U. S. INTERNATIONAL AIRLINE TRAFFIC FOR DEC. 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR %	U. S. MAIL TON-MILES **	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	9,454	7,154,000	12,067,000	59.29	19,145	7,855	554	192,268	984,749	1,741,287	56.55	248,872	240,496	99.16
Braniff	3,361	7,093,000	15,623,000	45.40	63,393	8,238	....	118,915	903,722	2,247,847	40.20	367,934	368,191	99.93
C & S	2,531	2,900,000	6,693,000	43.33	5,778	840	....	76,693	386,092	927,573	41.62	144,059	143,902	99.16
Colonial	2,599	2,027,000	3,435,000	59.01	2,116	859	....	3,576	226,467	415,569	54.50	66,491	56,260	98.95
Eastern	7,083	9,974,000	15,683,000	63.60	64,748	....	....	41,284	1,189,238	2,760,322	43.08	264,417	261,193	100.00
National	8,738	2,284,000	4,234,000	53.94	1,974	....	6,247	25,164	263,869	531,383	49.66	74,976	65,916	99.51
Northwest	6,009	9,658,000	17,393,000	55.53	240,804	41,997	19,802	713,690	2,049,466	2,903,017	70.60	544,416	604,180	89.70
Panagra	10,141*	11,919,000	19,014,000	62.42	49,854	34,339	251,024	617	1,666,303	2,661,599	62.61	521,600	498,983	99.10
PAA														
Latin Amer.	68,178	63,067,000	103,615,000	60.87	401,930	69,946	....	2,732,202	9,605,155	14,135,013	67.95	2,517,543	1,979,902	96.96
Atlantic	23,982	35,146,000	56,412,000	62.30	540,448	162,331	....	1,211,818	5,862,301	7,420,851	78.99	1,130,820	1,173,738	89.98
Pacific	6,419	22,993,000	40,949,000	56.15	515,589	64,351	....	725,485	3,824,666	6,106,413	62.63	826,904	837,613	99.99
Alaska	3,869	4,531,000	11,178,000	40.53	84,397	....	....	396,419	962,777	1,560,638	61.69	246,512	239,644	96.38
TWA	11,073	29,164,000	45,227,000	64.48	573,933	206,453	....	705,001	4,713,687	6,568,850	71.76	1,101,512	1,090,927	96.95
United	3,694	9,154,000	13,974,000	65.51	150,337	....	....	41,941	1,155,972	1,995,362	57.93	265,441	265,441	99.10
TOTALS	167,131	217,064,000	365,577,000	59.37	2,714,496	597,209	275,627	6,985,034	33,794,464	51,975,724	65.02	8,341,497	7,826,376	96.25

* Figure is preliminary.

** Includes air parcel post.

SUMMARY OF U. S. INTERNATIONAL AIRLINE TRAFFIC FOR CALENDAR 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR %	U. S. MAIL TON-MILES **	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	106,824	86,381,000	145,615,000	59.32	164,569	59,607	9,437	1,709,706	11,150,941	19,244,279	57.94	2,861,656	2,817,827	99.84
Braniff	30,584	64,320,000	149,199,000	43.11	225,818	43,702	....	1,401,233	8,047,780	21,008,860	38.31	3,455,982	3,457,168	99.36
C & S	26,635	31,804,000	77,416,000	41.08	41,610	5,159	....	672,142	4,034,192	10,788,016	37.40	1,682,490	1,694,330	98.82
Colonial	40,700	31,873,000	41,500,000	76.80	20,695	5,980	....	51,927	3,481,288	4,990,746	69.75	798,519	707,473	99.68
Eastern	59,842	83,324,000	160,037,000	52.07	415,145	....	....	324,160	9,645,052	26,371,890	36.57	2,713,159	2,673,523	98.85
National	112,615	29,092,000	63,074,000	46.12	17,343	31	25,568	305,633	3,304,227	8,239,159	40.10	1,146,404	1,081,532	98.03
Northwest	77,062	131,218,000	226,801,000	57.86	1,845,557	438,009	253,686	7,562,617	24,086,183	35,271,931	68.29	6,363,351	6,110,890	97.38
Panagra	* 118,960	127,784,000	218,417,000	58.50	455,298	273,562	2,404,998	617	17,329,846	30,367,138	57.07	5,988,491	5,833,827	98.96
PAA														
Latin Amer	797,097	711,232,000	1,180,073,000	60.27	3,209,386	679,693	....	25,310,507	99,468,519	159,338,718	62.43	28,794,861	22,498,031	99.17
Atlantic	349,150	509,363,000	786,273,000	64.78	5,401,772	1,423,170	....	13198,702	76,068,166	102,511,656	74.21	16,024,270	15,926,872	96.18
Pacific	82,328	287,882,000	450,268,000	63.94	4,571,603	502,840	....	7,553,766	42,282,367	66,225,417	63.85	9,365,278	9,098,875	99.80
Alaska	58,395	63,258,000	136,003,000	46.51	503,525	....	....	5417,689	12,570,322	20,694,135	60.74	3,101,013	2,656,728	98.44
TWA	148,101	372,654,000	575,907,000	64.71	4,200,772	1,597,334	....	7,138,912	53,868,312	81,128,389	66.40	13,611,929	13,541,241	97.18
United	42,236	104,352,000	160,968,000	64.83	893,013	....	....	508,075	12,447,560	22,184,026	56.11	3,093,897	3,253,975	94.92
TOTALS	2,050,529	2,634,537,000	4,371,554,000	60.26	21,971,111	5,029,087	2,693,689	71,155,686	377,784,755	608,364,360	62.10	99,001,300	91,352,292	98.11

* Figure is preliminary.

** Includes air parcel post.

NOTE: Figures include both scheduled and non-scheduled operations. Data in above tabulations were compiled by American Aviation Publications from reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient and Honolulu and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. DOMESTIC AIRLINE REVENUES AND EXPENSES FOR CALENDAR 1951

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 157,768,744	$137,683,090	$ 6,680,182	$ 3,279,692	$ 7,353,634	$ 1,374,664	$ 162,506	$ 128,038,172	$ 63,712,985	$ 64,325,187	$ 29,730,572
Braniff	17,763,677	15,254,677	1,320,779	361,547	464,159	133,421	178,589	15,409,296	7,043,504	8,365,793	2,354,381
Capital	38,702,493	34,064,248	1,175,957	1,007,768	1,119,595	201,074	524,982	34,993,348	16,887,599	18,105,749	3,709,145
Caribbean	989,792	696,183	207,387	....	28,728	6,119	13,856	894,759	361,589	533,170	95,033
C & S	11,826,791	9,978,331	1,202,976	267,091	220,441	89,949	20,143	10,909,913	5,047,268	5,862,645	916,878
Colonial	4,793,394	3,801,913	831,559	39,124	37,676	22,470	41,857	4,998,811	2,150,348	2,848,463	-205,417
Continental	8,120,975	6,290,960	1,189,352	60,521	146,625	45,005	269,197	7,377,068	3,701,317	3,675,751	743,907
Delta	25,312,732	22,358,416	998,067	421,010	765,540	282,890	266,934	20,675,101	10,012,627	10,662,474	4,637,631
Eastern	94,158,530	87,224,599	2,244,575	1,808,615	1,062,647	1,336,224	246,417	74,675,718	37,605,504	37,070,214	19,482,811
Hawaiian	3,851,460	2,982,363	308,993	112,365	346,103	63,733	22,178	3,764,606	1,453,571	2,311,035	86,854
Inland* #	3,116,679	2,533,462	474,767	34,028	46,126	23,658	76	2,812,913	1,272,600	1,540,313	303,766
MCA**	9,006,270	7,180,152	1,334,450	105,441	138,806	56,656	157,627	8,475,971	3,708,425	4,767,546	530,299
National	26,093,204	22,596,971	1,087,092	174,124	1,070,961	422,080	191,251	20,645,977	9,976,910	10,669,067	5,447,227
Northeast	7,366,859	5,535,763	1,519,980	98,221	106,770	29,483	13,934	6,977,584	3,176,398	3,801,186	389,275
Northwest	32,594,207	26,237,636	3,988,445	647,938	924,262	185,223	59,238	30,391,614	16,061,398	14,330,216	2,202,593
Trans-Pacific **	1,370,263	960,618	126,325	6,302	18,585	10,620	224,351	1,407,157	549,835	857,322	-36,894
TWA	96,689,176	83,184,168	5,366,667	2,703,446	3,010,458	751,458	423,773	83,217,308	42,035,259	41,182,049	13,471,868
United ###	112,659,627	95,209,193	6,887,757	3,537,732	4,399,611	874,883	1,475,675	92,728,367	41,117,129	51,611,238	19,931,260
Western* #	12,547,487	11,154,442	737,208	159,985	162,201	67,596	131,293	10,254,126	4,803,947	5,450,179	2,293,361
TOTALS	664,732,360	574,927,190	37,682,518	14,824,950	21,422,928	5,977,206	4,423,877	558,647,809	270,678,213	287,969,597	106,084,550

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.

** Figures do not include operations of local service segment (route 106) awarded MCA by CAB in the Parks Air Lines Investigation Case. Figures covering operations of route 106 are carried separately on local service airlines summary sheets.

UAL mechanics strike from July 27 to August 12, 1951.

Carrier authorized to transport mail May 15, 1951 (Docket No. 4986).

UAL pilot strike from June 19 to June 29, 1951.

U. S. INTERNATIONAL AIRLINE REVENUES AND EXPENSES FOR CALENDAR 1951

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 4,998,554	$ 4,205,255	$ 123,315	$ 112,090	$ 3,496	$ 354,872	$ 66,220	$	$ 4,820,971	$ 2,534,234	$ 2,286,737	$ 177,583
Braniff	7,592,795	4,895,172	2,068,410	107,993	....	370,218	125,331	....	7,708,387	3,560,427	4,147,960	-115,592
C & S	4,410,139	2,205,371	1,853,267	9,732	....	201,379	85,130	13,700	3,461,945	1,720,550	1,741,395	948,194
Colonial	1,929,160	1,706,344	172,913	15,289	....	9,620	3,473	2,713	1,639,707	690,509	949,198	289,453
Eastern	4,160,875	3,668,237	310,412	....	....	71,294	50,868	59,110	3,472,166	2,138,192	1,333,974	688,708
National	2,014,322	1,855,367	39,821	....	20,422	65,660	26,056	6,996	2,441,220	869,021	1,572,199	-426,898
Northwest	16,602,067	8,955,129	3,800,470	619,761	70,575	2,728,759	91,371	50,293	15,744,423	7,046,251	8,698,172	857,644
Panagra *	16,143,266	11,343,863	2,107,265	665,662	1,055,653	....	392,087	217,363	14,484,514	6,374,187	8,110,327	1,658,752
PAA												
Latin Amer.	64,801,539	45,002,697	7,227,000	2,011,120	....	8,039,599	1,162,444	613,940	65,079,734	28,298,644	36,781,070	-278,195
Atlantic	63,806,550	40,155,825	13,685,551	2,602,987	....	4,666,857	817,662	1,283,802	62,948,299	30,683,558	32,264,741	858,251
Pacific	35,965,666	19,861,565	11,098,518	872,559	....	3,162,992	314,042	156,330	29,573,979	16,711,093	12,862,886	6,391,687
Alaska	6,170,117	3,598,244	1,035,760	....	....	1,267,263	24,475	214,644	5,395,679	2,547,294	2,848,385	774,438
TWA **	48,094,183	31,223,957	9,013,699	3,113,025	....	2,977,343	597,203	803,123	42,960,329	19,938,852	23,021,477	5,133,854
United	8,566,068	5,914,693	676,871	....	....	150,343	33,529	....	9,970,389	6,037,524	3,932,865	-1,404,321
TOTALS	285,255,301	184,591,719	53,213,232	10,130,221	1,150,146	24,062,299	3,804,891	3,427,044	269,701,762	129,150,736	140,551,386	15,553,558

* U.S. mail pay accrued Jan. 1 through Sept. 30, 1951 on basis of temporary mail pay rate order of May 5, 1950 and for Oct. 1 through Dec. 31, 1951 on basis of order of Oct. 17, 1951.

** U.S. mail revenue computed at temporary rates in effect prior to issuance by CAB of show cause orders proposing reduction in rates of compensation for the carriage of mail on company's international routes.

U. S. INTERNATIONAL REVENUES AND EXPENSES, QUARTER ENDING DEC. 31, 1951

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 1,218,501	$ 979,519	$ 36,005	$ 38,549	$ 798	$ 108,326	$ 15,869	$	$ 1,362,308	$ 671,374	$ 690,934	$ -143,807
Braniff	2,062,313	1,367,839	519,068	39,484	....	88,644	40,603	....	2,431,689	1,152,862	1,278,826	-369,376
C & S	1,095,108	506,038	463,317	3,428	....	62,679	24,772	13,700	855,544	452,646	402,898	239,564
Colonial	342,232	325,018	4,254	4,270	....	2,774	1,293	....	392,311	171,596	220,715	-50,079
Eastern	1,339,878	1,180,984	112,879	....	....	28,855	16,200	....	697,561	308,701	388,860	642,318
National	392,687	350,346	2,209	....	8,132	21,652	6,908	3,250	510,986	167,667	343,319	-118,299
Northwest	4,183,755	2,116,753	950,118	159,348	17,656	792,841	27,454	....	5,755,038	2,264,537	3,490,501	-1,571,283
Panagra	3,936,611	3,129,178	155,700	161,227	299,647	....	122,697	10,114	3,688,811	1,562,973	2,125,838	247,800
PAA												
Latin Amer.	16,591,257	11,121,072	1,806,750	533,162	....	2,243,178	352,131	307,124	17,273,381	7,316,237	9,957,144	-682,124
Atlantic	15,938,518	9,657,897	3,428,730	796,421	....	1,216,458	285,295	444,866	15,622,612	6,720,184	8,902,428	315,906
Pacific	9,481,042	5,475,192	2,321,403	263,143	....	1,100,409	120,007	15,008	8,154,216	4,056,218	4,097,998	1,326,826
Alaska	1,263,725	823,761	37,918	....	....	361,420	15,071	7,837	1,523,255	703,946	819,309	-259,530
TWA *	11,064,977	7,590,873	2,271,103	823,323	....	987,694	158,588	229,069	11,495,547	5,428,650	6,066,897	-430,570
United	1,672,067	1,386,323	215,352	....	....	40,052	7,884	....	2,439,210	1,470,026	969,184	-767,143
TOTALS	70,532,671	46,015,873	12,324,996	2,822,355	326,233	7,054,982	1,194,772	1,030,968	72,202,469	32,447,617	39,754,851	-1,619,797

* U.S. mail revenue computed at temporary rates in effect prior to issuance of show cause orders by CAB proposing reduction in rates of compensation for the carriage of mail on company's international routes.

NOTE: Data in above tabulations were compiled by American Aviation Publications from reports filed by the Airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient and Honolulu and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. DOMESTIC REVENUES AND EXPENSES, QUARTER ENDING DEC. 31, 1951

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
[illegible]erican	$ 41,337,327	$ 35,379,776	$ 2,215,507	$ 850,661	$2,069,892	$ 347,390	$ 36,573	$ 38,286,406	$ 18,648,063	$ 19,638,343	$ 3,050,921
[illegible]raniff	4,552,694	3,853,533	354,378	95,942	113,435	29,042	83,416	4,361,941	2,172,747	2,189,194	190,753
[illegible]ntal	9,465,430	8,409,462	302,703	276,550	284,727	46,971	14,186	8,698,676	4,189,056	4,509,620	766,754
[illegible]ribbean	240,487	168,522	51,614	....	9,036	1,269	3,899	240,827	96,858	143,969	-340
[illegible] S	3,286,200	2,794,157	296,617	74,614	64,236	26,122	15,719	2,974,542	1,461,574	1,512,968	311,658
[illegible]onial	1,027,617	936,139	57,161	9,222	9,223	3,514	5,412	1,305,841	571,610	734,231	-278,224
[illegible]ntinental	2,415,665	1,871,698	253,309	23,205	41,855	14,176	83,924	2,337,478	1,258,859	1,078,619	78,187
[illegible]ern	6,522,417	5,718,430	273,964	133,942	196,467	68,105	24,857	5,398,188	2,534,262	2,863,926	1,124,229
[illegible]western	22,133,952	20,396,918	528,836	492,885	293,434	272,552	62,484	16,734,304	7,084,698	9,649,607	5,399,648
[illegible]waiian	1,146,146	708,480	292,899	29,777	90,474	15,117	5,331	1,021,787	389,939	631,848	124,359
[illegible]land*	756,256	693,664	32,530	10,713	12,345	6,152	....	772,784	382,932	389,852	-16,528
[illegible]A**	2,389,437	1,908,940	343,234	23,473	33,402	15,195	54,850	2,346,215	1,087,708	1,258,507	43,222
[illegible]ational	6,686,009	5,752,015	187,111	58,489	305,363	119,407	104,185	5,599,750	2,755,405	2,844,345	1,086,259
[illegible]rtheast	1,616,019	1,226,995	329,286	25,370	22,430	5,832	3,511	1,859,437	881,228	978,209	-243,418
[illegible]rthwest	8,201,849	6,841,341	702,338	177,698	269,323	49,989	15,814	6,941,039	4,312,597	2,628,442	1,260,810
[illegible]ina-Pacific	415,625	268,704	76,590	2,174	5,746	2,420	57,304	404,072	161,733	242,339	11,553
[illegible]A	25,015,605	20,791,307	1,593,357	711,539	767,297	186,982	24,795	20,052,159	10,816,920	9,235,239	4,963,446
[illegible]ited	30,212,583	25,161,678	2,717,617	890,201	1,072,206	212,522	478,310	24,612,673	11,641,644	12,971,029	5,599,910
[illegible]tern*	3,065,843	2,834,720	195,316	48,196	40,165	15,316	765	2,531,708	1,357,524	1,174,184	534,135
TOTALS	170,487,161	145,769,499	10,909,367	3,934,651	5,701,036	1,438,073	1,075,355	146,479,827	71,805,357	74,674,471	24,007,334

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.

** Figures do not include operations of local service segment (route 10b) awarded NCA by CAB in the Parks Air Lines investigation Case. Figures covering operations of route 10b are carried separately on local service airlines summary sheets.

People

Schroeder

Perry

ADMINISTRATIVE

Joseph F. Ringland, president of Northwestern National Bank of Minneapolis, has been elected a director of Western Air Lines. Ringland filled a vacancy created by the resignation of **I. W. Burnham II.**

Howard A. Morey, chairman of the Wisconsin Aeronautics Commission, has been elected a corporate vice president of Wisconsin Central Airlines. Three new members of the company's board of directors are **Hal Carr,** former executive vice president and now with McKinsey & Company, management engineers; **Harold Emch,** vice president of Brew, Emch & Jenkins Co., Milwaukee investment house; and **Arthur E. Schwandt,** secretary-treasurer of the airline.

Edmund O. Schroeder has been elected assistant vice president-maintenance of American Airlines and **Joseph F. Martin,** former director of maintenance, has been made assistant to the vice president of maintenance and supply, **G. J. Brandewiede.** Schroeder, who will be based at AA's maintenance depot in Tulsa, will have **Frank Ware** as his assistant.

Robert C. Perry has been appointed assistant to the president of Resort Airlines. Perry, formerly Washington federal liason man for Seaboard & Western Airlines, will make his headquarters in Washington.

Louis L. Berg, vice president-sales for U. S. Airlines, has been elected to the company's board of directors.

Brig. Gen. Thomas B. Wilson, board chairman of Trans World Airlines between 1938 and 1947, has become director of the Defense Materials Procurement Agency's new office in London with the personal rank of minister.

Roy Backman, vice president-traffic and sales for Alaska Airlines, has resigned and returned to Los Angeles.

Morris L. Rinehart has been elected an assistant treasurer of American Airlines.

Todd G. Cole has been elected assistant secretary of Delta Air Lines. He already holds the post of comptroller.

John F. Davidson, well known aviation figure, is now assistant general manager for California Eastern Airways.

G. Robert Henry has been named by Bonanza Air Lines to head a newly-created legal and government affairs department. A former CAB attorney, Henry has more recently been engaged in private law practice including Washington representation for Bonanza.

Continental Air Lines has promoted **E. B. Ranes,** formerly chief accountant, to the post of assistant vice president-flight service and **E. R. Colvert,** general office manager and assistant to the treasurer, promoted to the position of controller.

Robert E. Wieland has been named regional vice president of National Airlines in charge of operations for the New York area. Wieland, who has been vice president in charge of foreign operations since September, 1949, assumes his new duties May 15. **Callons D. Kinnard,** western regional manager of agency and interline sales, moves from New Orleans to Havana to assume direction of National's foreign operations.

William D. Kenney, former accountant with Aircraft Tools, Los Angeles, appointed by The Flying Tiger Line as chief accountant. Kenney succeeded **Esther M. Coy,** promoted to special staff assistant to general manager Fred Benninger.

TRAFFIC & SALES

James B. Miller, d.s.m. at Washington for United Air Lines, has been named European director, succeeding **Eugene George,** who is returning to this country for reassignment. **Malcolm W. Stevenson,** recently d.s.m. at Detroit, replaces Miller at Washington. **Morgan R. Nickell** has become d.s.m. at Chicago, replacing **Clyde Doran,** recently appointed chief of United's sales office in Honolulu. **L. G. Wood,** former d.s.m. at Akron, succeeded Nickell at Boston.

Miller

Stevenson

L. D. Victor, formerly Northwest Airlines d.s.m. at Duluth, has been named Winnipeg d.s.m., replacing **T. W. Guns,** transferred to Vancouver, B. C., in the same capacity. **W. J. Kenney,** leaves Vancouver to fill the new position of ass't d.s.m. at Seattle.

Mayo Thomas named manager of international sales for the Flying Tiger Lines. He was formerly Southern California sales manager. **T. W. Holmgren** named acting d.s.m. at Los Angeles. FTL has also appointed the following sales managers for newly-created district offices: **Van S. Hurd,** Oakland; **T. A. Garin,** Rochester, N. Y.; **John R. Warren,** Grand Rapids; **Frank Rogers,** Binghamton; **Delbert D. Funk,** South Bend; and **John F. Hatch,** Providence, R. I.

Parke Wright, New York district sales manager for National Airlines, has resigned to join Lyke Bros., Inc., of Tampa, Fla.

Daniel S. Maddox has been appointed by All-American Airways as district manager for New York City, northern Pennsylvania and New Jersey.

Desmond

Stille

Charles L. Bulterman named by KLM Royal Dutch Airlines to replace **Margery McInerney,** resigned, as U. S. mid-west regional manager.

Robert L. Desmond is now supt. of interline sales for United Air Lines.

Ernie Kuttzchnitt, assistant to Flying Tigers' vice president-traffic, appointed western regional sales manager for the company. **Harry Adamson** succeeded Kuttzchnitt as assistant to the traffic v.p.

Walter Johanson became district manager at New York for Scandinavian Airlines following the appointment of **Donald N. Kiernan,** former manager, as assistant passenger sales manager. **George Stille** has been appointed SAS district manager at Washington, D. C.

Donald K. Zeiner has been named manager of Braniff Airways' reservations office at Houston.

Paul L. Nelson, Pan American World Airways stations manager at Barcelona, Venezuela, named to fill the new position of d.t.s.m. there. **Oscar Giner** succeeds Nelson as Barcelona station manager.

William A. Staley is now assistant manager-rates and tariffs for The Flying Tiger Line.

OPERATIONS-MAINTENANCE

Slick Airways has appointed three captains to management positions in a newly inaugurated training program to develop administrative abilities of flight personnel. **Capt. Charles F. Piozet** named as assistant to the president; **Capt. F. B. Lynott** became eastern divisional traffic manager; and **Capt. Wilbur L. Brown** assigned to a special mission in Canada where Slick recently acquired an interest in Dorval Transport, Ltd., a contract cargo carrier.

Robert Sawyer is now assistant chief maintenance engineer for Braniff Airways.

Ozark Air Lines has named **William E. Enochs** as chief flight supt. heading dispatch dept. and **Robert O. Cutright** as assistant supt. of maintenance in charge of overhaul. **William Eaton** becomes line maintenance foreman.

J. B. Coyle is now manager of operations at Milwaukee for American Airlines.

E. L. Matheson, Detroit terminal manager of cargo for American Airlines, has resigned from the company and joined Barnett-Detroit Cartage Co. as operations manager. A 12 year veteran with the airlines, Matheson at one time headed the Air Cargo, Inc., consolidated terminal experiment at Willow Run Airport.

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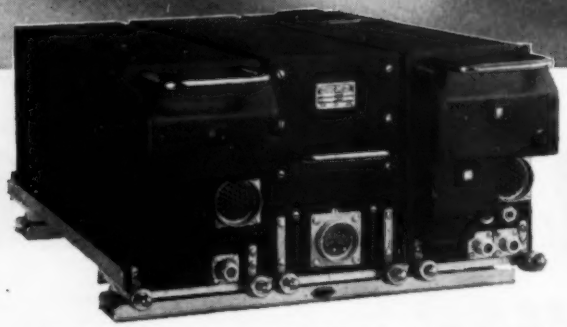

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DELEGATES TO AAAE Convention inspect Bell Model 47 helicopter at new Bell plant at Hurst, Texas.

New Airport Reactivation Plans Demanded

Airport executives lash into Recapture Clause at meeting; insist on a more practical system.

By Richard F. McGrath

IF THE OPNIONS of some 170 airport executives and other responsible civil aviation people are any guide to the improvement shown thus far by the armed services in their methods of reactivating civil air terminals, there has been no improvement.

Such was the attitude evidenced recently in a key session of the annual conference of the American Association of Airport Executives in Fort Worth, Texas, where the Recapture Clause of the Surplus Properties Act came in for a thorough going-over. During the panel discussion called "Let's Get Practical on Military Activation of Airports," the Air Force representative, Brig. Gen. Harold R. Maddux, chief, Air Bases Division, deputy chief of staff-operations, found himself on the receiving end of complaints which ranged from leases, to runways, to landing fees, to local and national politics. Complaints generally clustered around these main objections:

Reactivation Machinery

• **Airport people** at the practical level aren't getting enough information on current status and relative takeover probabilities to enable them to deal intelligently with airlines, other airport tenants, and city fathers. Airport men offer no serious argument with announced reactivation policies; it's the unannounced ones that worry them.

• **Airlines**, in several cases, are at a loss to plan equipment routing to satisfy traffic demands as well as to meet what seem to be arbitrary demands of the armed services.

• **Machinery of reactivation,** according to airport managers, is both cumbersome and unrealistic.

Although primarily voicing airline viewpoints, W. H. Roberts, Air Transport Association representative in the Fort Worth region, summarized what seemed to many the main arguments of civil aviation in general. Military people whose appreciation of practical problems stamp them as laymen are arbitrarily imposing restrictions and making commitments without regard to their effects on actual operations.

He cited the Air Force tendency to insert into joint-use leases arbitrary ceilings regulating the number of airlines as well as the number of flights that may serve an airport, prohibiting any additions. How does it happen, Roberts asked, that current schedules and presently certificated airlines become the maximum?

All Photos Courtesy Bell Aircraft

NEWLY-ELECTED officers of AAAE (left) are Cecil Meadows (left) mgr., Bakersfield Airport, Calif., president and Bill Fuller, Fort Worth aviation director, vice president. At right are J. A. McDougall, Revere Electric; R. J. Mander, Springfield Munic. Airport; E. Shugert, Love Field; A. J. Benintende, Delta Airlines, L. Chandler, Decatur Mun. Air.; G. Borsari, CAA.

Roberts also asked why the military so frequently have to take over entire terminal buildings, considering that the average airport terminal, designed primarily for the peculiar needs of transportation, offers negligible office area.

A solution to such problems, Roberts stated, should encompass:

• **A pre-takeover conference** at the proposed site among all parties, including practical people at the operating level, which would thrash out (a) the type and extent of the proposed military operation; (b) present and anticipated airline schedules; (c) the extent of fixed-base and itinerant civil aviation; (d) the proposed airport layout.

• **Results of this preliminary meeting** would become a framework for working out details in traffic patterns, ATC, airspace reservations, communications, security, buildings, hours of operation, and amount of operations.

• **Specific leasing requirements** thus arrived at could become the subject matter of the take-over directive from the using agency (Air Force or Navy) to the acquiring agency (U. S. Corps of Engineers), with whom the responsible city officials are to deal.

If at any point this method broke down, immediate recourse to the Use Panel of the Air Coordinating Committee could be had.

Airport News Digest

Almost Finnish Airport: World attention is focused on the new airport at Helsinki, Finland. It is supposed to be finished in time for the Olympic games this summer, and to rush construction Finland has had an effective idea of putting drunks to work. If you get arrested for being drunk in or near Helsinki, you're given the alternative of going to jail or going to work on the airport (with pay). Result is that vast majority of drunks prefer to work off their jail time and collect pay. Food and accommodations are good. Last word from Helsinki is that the airport will be finished in time, even if the country has to dispense free liquor to produce more drunks to speed up the work!

Well Rounded: At the American Association of Airport Executives meeting last month, W. H. Oswalt, city manager of Midland, Texas, talked on "What a City Official Expects in an Airport Executive." Here's an excerpt from his speech:

"An airport manager must be a man of vision and ambition, an after-dinner speaker, night owl—work all day, stay up all night, and appear fresh the next day. Must learn to sleep anywhere and eat from two to six meals a day; inhale dust, drive through mud and rain, summer and winter, without perspiring or acquiring B. O.

"Must be a man's man, a ladies' man, model husband, a father, a devoted son-in-law, a good provider—a plutocrat, democrat, republican, new dealer, old dealer, and a fast dealer—technician, electrician, machinist, mechanic, and ambidextrous.

"Must be always smiling, creating good will for himself and party, be a good correspondent, attend lodge meetings, civic meetings, tournaments, funerals, and births—visit old and new friends in hospitals and jails, constantly study new tricks, and in spare time look for something else to do, and attend all conferences.

"Must have a good car, attractive home, belong to all clubs and lodges, have ready money for entertainment.

"Must be an experienced driver, talker, liar, dancer, bridge player, poker hound, toreador, diplomat, financier, and philanthropist—an authority on palmistry, chemistry, archeology, dogs, cats, horses, blondes, brunettes, red heads and lingerie."

Anything he left out?

Noise Soundings: A revealing insight into the problem of noise-and-nuisance complaints by people living near airports has been sent us by a Georgia correspondent, partner in a prominent Atlanta law firm. He writes: "Thus far, to our knowledge, no jury has rendered a verdict in Georgia against an airport or an aviation company because of low flying, noise, dust, dirt, etc."

One of the most valuable of the long array of legal tools—precedent—seems clearly on the side of the airport operators. Our correspondent sent us along extracts from a brief his office filed with the Georgia Supreme Court in an airport litigation suit. Here are some of the precedents and powerful legal reasons advanced to plead the cause of the airport operator:

• **"The law is clear** that where a city constructs and operates an airport under statutory authority, the airport will not be adjudged a nuisance if it is created and operated in a proper manner. Such noises and dust as are created by the necessary and proper operation of a properly located airport will not be declared to constitute nuisances, although they result in injury and inconvenience to adjoining landowners."

• **In another case** involving complaint against a planing mill, Chief Justice Lumpkin wrote: "The only sense it will offend is that of hearing. And we know of no sound, however discordant, that may not, by habit, be converted into a lullaby, except the braying of an ass or the tongue of a scold. . . . And if it be true that the risk from exposure will increase the insurance . . . it cannot be denied that it will be more than counterbalanced by the enhanced value of the property, produced by the prosperity of the city, occasioned by these establishments . . . As well attempt to stop up the mouth of Vesuvius as to arrest the application of steam to machinery in this day."

So be it in the case of airports.

Editorial

(Continued from page 13)

the rest of your book—the absolute reverse of the way you wrote it.

By the way, have you seen the lists of the nonskeds owing the federal government transportation taxes which presumably they collected from their passengers? One of them owes the Bureau of Internal Revenue $192,000, another $78,000, another $76,000, another $38,000, and so on. It's quite an impressive list for a taxpayer. So you approve of that way of doing business, eh Mr. Bolles? Brother were you taken for a sucker!

7. But let's wind up with the *piéce de resistance* of your letter. In the fifth paragraph you say that since you were not writing a book about aviation in America, it was *out of your province* to show that you had an elementary knowledge of the industry, its growth, its regulation, its equipment problems, its operating economics, or its people.

Well, well, well. That's quite a confession. *Then why did you write a book containing so many false, misleading, distorted, lying statements?* Did you tell the public who buys your book that you didn't inform yourself even about elementary facts? Isn't this a frank admission on your part that you wrote about a subject you didn't know anything about? Your book was intended to create impressions in the public mind highly unfavorable to an industry justifiably proud of its stewardship to the public. You have a lot to say about morals in your book. You'd better read some of your own moralizing and then do penance for—well, you called it, we didn't.

. . . Wayne W. Parrish

WILLIAM M. BERRY, assistant to the regional administrator, CAA, Fort Worth, since 1945 has retired from the CAA after almost 15 years of service, and has been named general manager of Suttgart Airport, Ark. Mack Clark has been appointed to replace him.

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Production Spotlight

Military Appropriations Cut Under Heavy Fire

Reaction to the House-passed version of the fiscal 1953 military appropriations bill is still coming in. Besides voting $46,207,177,554 for the Defense Department for the coming fiscal year (a $4,713,845,216 cut from the President's budget request), the House also placed a $46-billion-dollar limit on the amount the military could spend. The $4.7-billion reduction includes an AF cut of $1,677,965,858 ($560 million of it for aircraft and related procurement); a Navy slash of $1,007,149,858 ($150 million of it for planes and related procurement); and an Army reduction of $1,955,600,000 (aircraft procurement uncut).

Defense Secretary Robert A. Lovett has written the Senate Military Appropriation Subcommittee asking specifically that the Upper House restore $3.6 billion of the $4.7 billion. He also asked the Senate to eliminate the spending limitation imposed by the House.

At the same time Adm. Dewitt C. Ramsey, president of the Aircraft Industries Association, charged the spending limitation would cause the already-stretched-out aircraft production program to be stretched out even further. He said the ceiling on 1953 expenditures would mean that the 143-wing Air Force, originally slated to be ready in July of 1954 and now scheduled for completion in early 1956, would not actually be attained until late in 1956.

The Senate is not expected to act on the military appropriations bill for at least several weeks.

Union Shop Provision Fight in Stalemate

The union shop issue continues to be a thorny one in the aircraft labor picture. Even though public and labor members overruled the objections of the industry members of the Wage Stabilization Board and by an 8-4 vote recommended that some form of union shop agreement be granted by Boeing to IAM-AFL workers at Wichita and by Douglas to UAW-CIO employes at Long Beach, both companies have refused to do so.

This issue was the only remaining recommendation still before the WSB in the two aircraft cases. A similar situation holds true in the Ryan Aeronautical-UAW agreement but that case was withdrawn from WSB action when the contract was signed.

Union officials point out that the no-strike clause now in effect in the Boeing and Douglas contracts does not apply to the union shop issue but observers point out there is little likelihood of strikes being called at the two plants just over the one point. It is more probable that the Autoworkers and Machinists will redouble their efforts to get the union shop provisions inserted when the contracts come up for renewal.

As one union spokesman pointed out, "If we controlled the membership enough so that we could call a strike over the union shop [alone], we really wouldn't need it."

Use European Plants?

A proposal that Europe's idle plants and its pool of skilled workers be used to build American planes and relieve the "pressure" on American aircraft builders has been made by Prince Bernhard of The Netherlands. He told a National Aeronautic Meeting of the Society of Automotive Engineers that Europe has 6,000 machine tools and about 5.5 billion square feet of manufacturing space to contribute to a plane production program.

YB-52 and YB-60 Make First Flights

Both prototypes of the all-jet USAF intercontinental bombers have made their first flights. The Boeing YB-52 (top) and the Convair YB-60 (bottom) swept wing version of the B-36, each powered by eight 10,000 pound thrust Pratt & Whitney J-57 engines, took to the air for the first time. Boeing already has a production order for the B-52 "Stratofortress." Thus far Convair orders call for only the two prototypes.

Also making its maiden flight recently was the Piasecki H-21 'copter.

USAF Connies to Fly as First-Line Radar Centers

USAF has taken over the Navy idea of flying radar detection centers (first embodied in the Lockheed PO-1W and PO-2W Constellations), and has cancelled its orders of C-121C's as Military Air Transport Service transports. The AF orders have been replaced with requests for Lockheed RC-121's, which will be similar to the Navy Connies (now called WV's).

With these new radar-fitted Connies, the USAF will be able to operate well ahead of the ground radar screens now ringing the northern borders of North America and will thus have earlier warning of any attacking enemy bombers. One of the faults of the present ground-radar system is that it does not provide enough time after detection of enemy planes to launch an efficient interception mission.

Moreover, the ground network (like all radar) is capable of detecting planes only along the line of sight, and thus has only limited range. The new high-flying RC-121's, however, will have greater pick-up range and will thus provide more time in which to get the interceptors into the air.

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Walter Crash Unit in service at Washington (D.C.) National Airport. Similar units in service at LaGuardia Field, International Airport, Newark Airport, Logan Airport (Boston).

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BOEDY'S ALBUM

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Trans World Airlines
Kansas City, Kansas
September 2, 1948

Burroughs Agin
Trans World Airlines
Kansas City, Kansas
September 2, 1948

Carol E. Long
Trans World Airlines
Kansas City-Cleveland
September 3, 1948

Charles W. Meyers (QB)
Eastern Air Lines
at Cleveland, Ohio
September 3, 1948

W. H. ("Bill") Bowen
Civil Aeronautics Admin.
at Cleveland, Ohio
September 3, 1948

R. M. ("Bob") Barker (QB)
U. S. Marine Corps
at Cleveland, Ohio
September 3, 1948

E. W. ("Bennie") Krueger
Cleveland Pneumatic
Cleveland, Ohio
September 3, 1948

Orin ("Moose") Redhead
Cessna Aircraft Corp.
at Cleveland, Ohio
September 3, 1948

E. Kemp Lasswell
U. S. Air Force
at Cleveland, Ohio
September 3, 1948

Len J. Povey (QB)
Fairchild Aircraft
at Cleveland, Ohio
September 3, 1948

Duane Stranahan
Champion Spark Plugs
at Cleveland, Ohio
September 4, 1948

Peggy Rex
at Cleveland Air Races
Cleveland, Ohio
September 4, 1948

Mildred (Mrs. Tom) Herbert
John D. Herbert
at Cleveland Air Races
September 4, 1948

K. B. ("KB") Wolfe
U. S. Air Force
at Cleveland, Ohio
September 4, 1948

S. W. ("Woody") Fox (QB)
at Cleveland Air Races
Cleveland, Ohio
September 4, 1948

C. F. ("Chet") Colby (QB)
U. S. Air Force
at Cleveland, Ohio
September 4, 1948

Candid snapshots from the famous collection of Kenneth

BOEDY'S ALBUM

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at Early Bird Dinner
Cleveland Air Races
September 4, 1948

Jean W. Goff
at Early Bird Dinner
Cleveland, Ohio
September 4, 1948

Helen L. Goff
at Early Bird Dinner
Cleveland, Ohio
September 4, 1948

D. V. Gallery
United States Navy
at Cleveland, Ohio
September 4, 1948

Louis E. Leverone
National Aeronautical Assn.
at Cleveland. Ohio
September 5. 1948

W. W. ("Bill") Wilkerson
Delta Air Lines
at Cleveland. Ohio
September 5. 1948

W. A. ("Bill") Sweet
National Air Shows
at Cleveland. Ohio
September 5, 1948

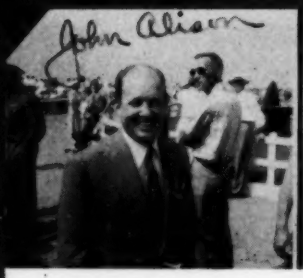
Rosemary Ball
Robert Ball
Detroit News
September 5 1948

Delos W. Rentzel
Civil Aeronautics Admin.
at Cleveland. Ohio
September 5, 1948

Gene Burch
The BG Corp.
at Cleveland. Ohio
September 5, 1948

F. C. ("Fred") Crawford
Thompson Products, Inc.
Cleveland, Ohio
September 5, 1948

Ruth Freckleton
N. J. State Aviation
at Cleveland. Ohio
September 5, 1948



John R. Alison
Dept. of Commerce
at Cleveland, Ohio
September 5, 1948

R. F. ("Dick") Whitehead
United States Navy
at Cleveland Air Races
September 5, 1948

Wendy F. Byers (99)
at Cleveland Air Races
Cleveland, Ohio
September 5, 1948

John L. Collyer
B. F. Goodrich Co.
at Cleveland, Ohio
September 5, 1948

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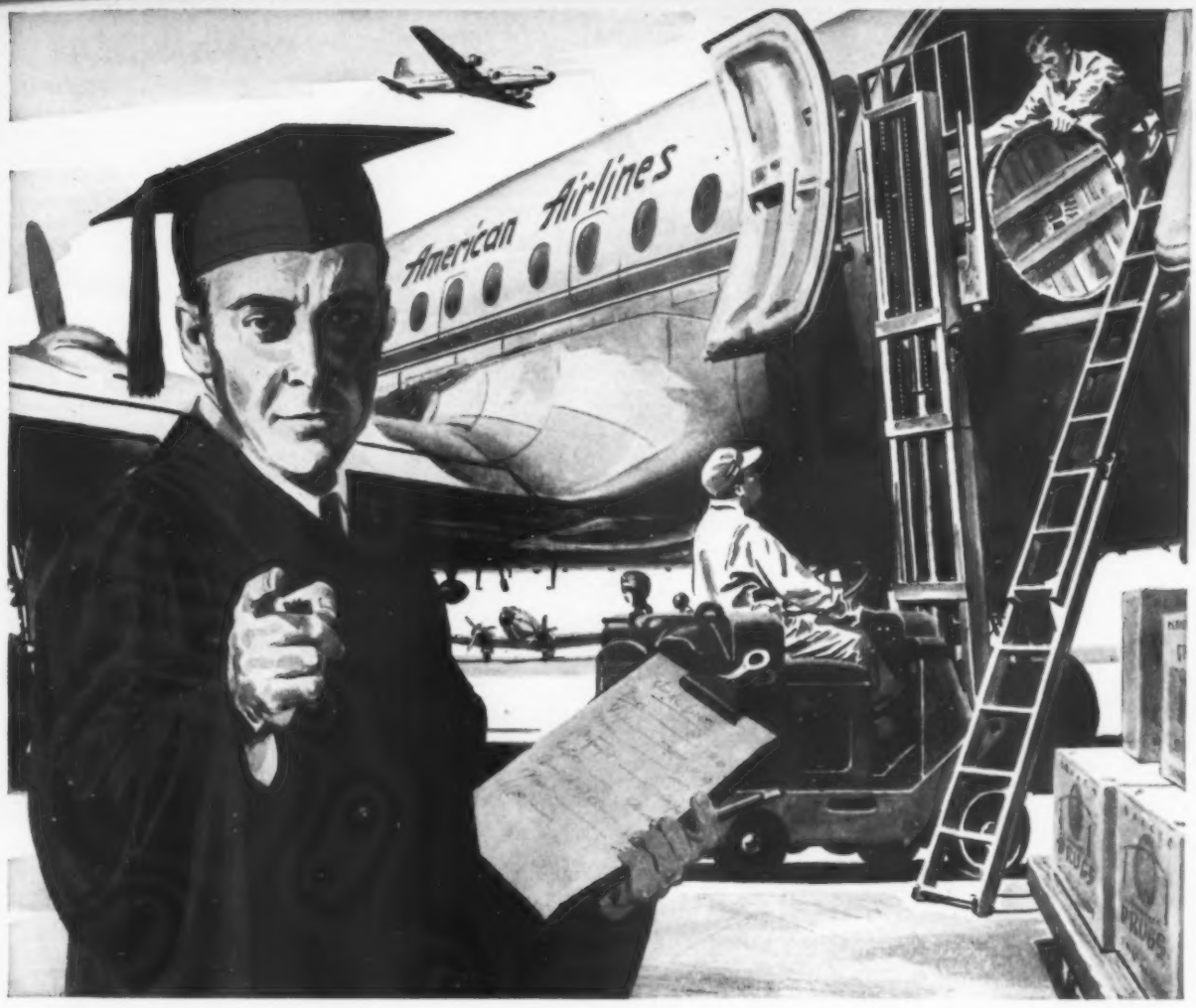

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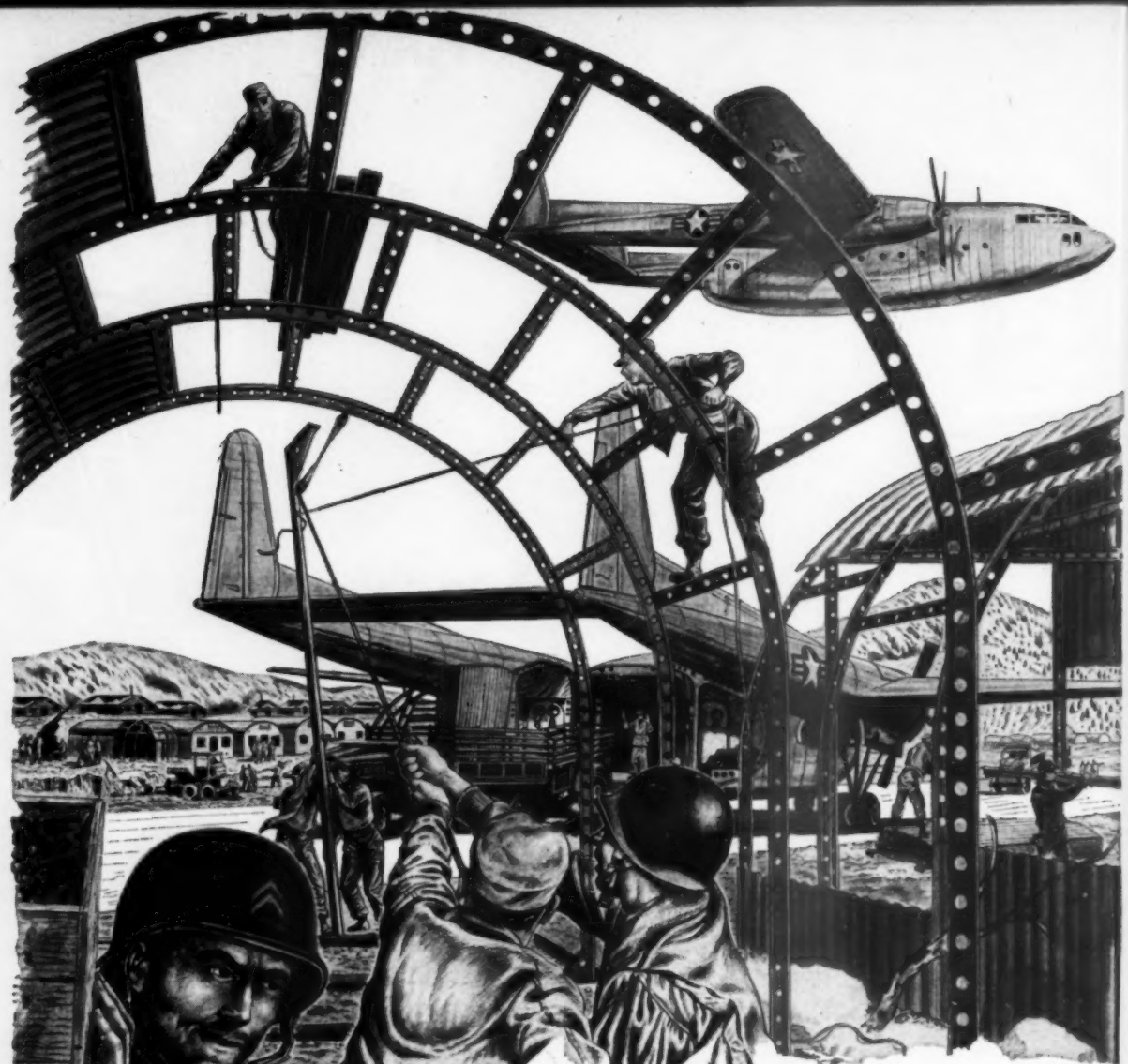

Military cities are built of Quonsets, tents, field hospitals, radar detectors, guns, supply units and countless other items of food, shelter and warfare. Thanks to the "Flying Boxcar," military cities spring up overnight wherever troops dig in—though no roads and no bridges exist. Fairchild's C-119 all-purpose transport *delivers* anything needed from the air!

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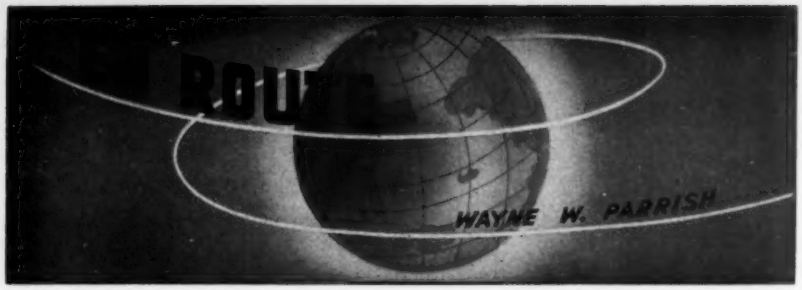

Angel Falls. In 1935 an adventurer-pilot by the name of Jimmy Angel discovered a very high waterfall while flying over the dense jungle country in southeast Venezuela in South America, between the Orinoco and the Amazon rivers. Never before seen by a white man, this towering ribbon of water was believed to be the highest in the world. It was named after **Jimmy Angel.**

Two years later Jimmy crash-landed his single-engine Fokker airplane on the 6,000-foot-high mesa from which the falls drops, but he and his wife and another companion never got to the falls. Instead they had to make their way down off the mesa and return to civilization with the help of Indians who lived in the area.

Little was known about Angel Falls until 1949, when **Ruth Robertson** headed an expedition which succeeded in reaching the falls by a difficult route up the canyon from the north. An illustrated article about the expedition and the falls appeared in the *National Geographic Magazine* for November, 1949. Measurements taken on the expedition proved that Jimmy Angel had been right—it was indeed the highest falls in the world by a wide margin.

World's Highest. Just a handful of white people have seen the falls from the ground. A few hundred have managed to see it from the air. Thanks to **Sid Stewart,** president of Chicago & Southern Air Lines, and to **Dr. Rafal Arraiz,** president of LAV, the Venezuelan airline, I'm one of the few. Just recently I accompanied **Stewart** and **C. E. Woolman,** president of Delta Air Lines, on a flight to Venezuela to see the C&S route, and it was our good fortune to have a DC-3 provided by Dr. Arraiz to make the flight over uncharted country to Angel Falls. It was, to say the least, an experience of a lifetime.

A waterfall can be pretty exciting, especially a very high one. Angel Falls has a sheer main drop of 2,648 feet and a total drop of 3,212 feet. Thus the main drop is fifteen times as high as the main American Falls of Niagara. Or to give you another perspective, it's twice as high as the Empire State Building. Put this thin cascade into a wild setting of jungle and mountainous mesa and you have a jewel the like of which you can't find elsewhere in the world. There are many other beautiful falls in the area; it just happens that Angel Falls holds the world's record for a single spectacular drop.

✣ ✣ ✣

Mystical Paradise. To be frank about it, the area in which Angel Falls is located fascinated me quite as much, if not more, than the falls itself.

Only once before in traveling about the world have my eyes witnessed something which seemed truly unreal, something that can be described only with the word "mystical," something you can conjure up in dreams but which doesn't seem to exist in this work-a-day world of ours. You might call it "paradise," in the real sense of the word.

What I saw once before was in Norway, where a combination of sheer high cliffs, a myriad of waterfalls, bright sunlight, mist and haze, a steep valley with neat farms, rushing brooks, and the deep greenish-blue water of a fjord far in the distance, all comprised an unforgettable scene of mystical grandeur which neither words nor artist could adequately portray. That scene in Norway was "beyond the barrier" of realism; I had never experienced it before or since—until we approached the mesa of Auyan-tepui in Venezuela.

But this was a different kind of mysticism and paradise. The high mesa of Auyan-tepui rising out of the plains is rightly named; it means Devil Mountain. Ruth Robertson wrote that it reminded her of Sir Arthur Conan Doyle's *Lost World.* It is a paradise, that much is certain, but it is a paradise for the ages, not for the white man. It had all the atmosphere of inscrutable, unfathomable secrets forbidden to mere man. It was tempting and luring. It was fascinating—but I was mighty glad to leave. I felt I had been intruding—or trespassing.

✣ ✣ ✣

Out of the Plains. Just what is a paradise? To me it is a profusion of waterfalls, a great abundance of green, sheer irregular masses of rock, and a mist or haze in the air. I have flown close down over the entire length of the Grand Canyon three times and I am forever awed by its color and grandeur. But Grand Canyon is not an ethereal paradise, at least to me. My paradise must have lush green growth combined with running and falling water, mist and haze, and rugged terrain. Twice now these combinations have produced something mystical.

Angel Falls is only about 180 miles due south of the town of Ciudad Bolivar which is 200 miles up the Orinoco River from the Atlantic. Most of the flight is over grassy plains broken only by iron ore and rock hills jutting out of the otherwise level terrain. Toward the south there are areas of dense jungles and sizeable rivers.

Then in the distance, rising sheer out of the plains, and at first indistinct through the haze, is this great huge flat-topped mesa surrounded by other smaller mesas of various sizes and shapes, a strange assemblage of prehistoric erosion indeed to find in this tropical region between the Orinoco and Amazon. Dense jungle covers all of the nearby region and the mesas themselves tower almost to the clouds in a sort of unreal phantasmagoria. It is almost an illusion, this hidden paradise, this Lost World.

✣ ✣ ✣

Lost World. Soon we are flying just over the top of the mesa, looking down sharp cliffs and mammoth fissures to the densely-forested bottoms of canyons and a rushing river and its tributaries, and waterfalls in every direction. The wind whips our DC-3 around as if to warn that this is forbidden territory. Our plane seems but a tiny speck as we try to gain perspective with canyons which out-do the Grand Canyon in depth and magnitude.

Our pilot has been here several times before, but finding Angel Falls in this profusion of waterfalls and canyons isn't easy. He finally spots it, toward the west, and we all get a good look. But there is so much else to see, so many fantastic vistas, that each rivals the other for attention. And then the mesa itself, deceptively level despite its many fissures, sweeps upwards toward the south as if to beckon still further into the unknown. It is inviting, almost smooth enough for a landing, or so it seems. But that flat top is a trap to all who would try to learn the secrets of Auyan-tepui, Devil Mountain.

A trap? There is Jimmy Angel's plane on that mesa, a few miles south of Angel Falls, sitting there in the underbrush as neatly as though it had landed there yesterday. It looks to be in good condition, although it was 15 years ago when it flew the last mile to its final resting place. It will never be moved. It is trapped in the Lost World, as a fly in a spider's web, to live out its days with the wind and the rain and the Gods who call Auyan-tepui their home.

Left to the Gods. As our DC-3 left the turbulent air of the wild mesas and returned north over the peaceful low country, with its winding rivers and large patches of dense forests, a state of calm came over me. I had seen Angel Falls, but I doubt that I ever want to go back again. Someday many years hence, perhaps, civilization will progress into the canyons and a highway will make those canyons and falls available as a national park. But until then, I'm satisfied to leave everything to the exclusive use of the unknown. Man has not yet by any means conquered this entire globe on which we live.

Our LAV captain was **Carlos Lomena** and his 1st Officer was **Julio C. Rodrigues,** both experienced pilots who know the back country well. Also on the flight were **Conrado Lodi Focardi,** the LAV agent at San Felix on the Orinoco, **Mr. Lloret,** chief of LAV's passenger department and **Richard A. Giuski,** of Agencia Candes, the C. & S. agent at Caracas. Thanks, LAV, it was a wonderful trip.

Around the World

Australia Orders Rear-Facing Seats

AN ORDER requiring rear-facing seats on all new civil transport planes of Australia's airlines is being drafted and will soon be issued by that government. The arrangement will cut accident fatalities by at least 25%, government officials believe.

The order will not apply to planes currently operating in the country, but only to types to be delivered. Qantas Empire Airways' three Lockheed Super Constellations on order will have to be extensively modified, including heavier floor stressing. Also affected is British Commonwealth Pacific Airlines' Comet II jet transport order.

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TRANSPORT

Australian Air Pilots Association, representing about 900 airline pilots, will soon ask for substantial pay increases for its members. Present scale ranges from $1,640 a year for a first officer probationary to $4,372 for a Captain Grade One. First move will be an approach to Commonwealth Public Service Arbitrator on behalf of pilots of government-owned Trans Australia Airlines.

Australian airlines have raised passenger and freight rates to help cover rising costs. Trans Australia Airlines, and Australian National Airways, increases amount to about 15%, with Ansett Airways rising 20%.

West African Airways has ordered four Handley Page Marathon four-engine, 18-seat transports for use on routes in Nigeria, the Gold Coast, and French West Africa.

Aquila Airways, British independent operator, is scheduled to start a weekly flying boat service May 17 between Southampton and Marseilles.

Sabena Belgian Airlines will operate a record seven weekly services between Brussels and the Belgian Congo this summer, including a second flight to Stanleyville via Rome, Athens, and Cairo.

Scandinavian Airlines System has chartered a three-engine Junkers JU52 from Ahrensbergs Flyg, Swedish non-sked, and is using it on the Malmo-Copenhagen route.

South African Airways is reported to be considering purchase of a de Havilland Comet Series I from BOAC.

Swissair is said to be contemplating North Atlantic all-cargo service. Nearly all Swiss watch exports to the U.S. go by air.

International Civil Aviation Organization has published an English, French, and Spanish aeronautical dictionary, designed to clarify misunderstandings of 2,500 commonly-used terms in the three languages.

Aer Lingus, Irish Air Lines, will operate a record 650 flights monthly this summer, using 40-passenger Bristol 170's to supplement its DC-3's. There will be up to 20 flights daily Dublin-London, 50 weekly to Glasgow, 37 to Liverpool, and 33 to Manchester. New routes have been started to Edinburgh and Cardiff.

•

MANUFACTURING

Two seven-passenger light transport prototypes, built by Max Holste (MH-1521), are expected to make their first flights at Reims, France, this summer and fall. One is equipped with a 450-hp Pratt & Whitney engine, the other an Armstrong Siddeley Cheetah engine.

Yugoslavia has purchased two Hiller 360 helicopters for agricultural work and transportation of mail between Adriatic Islands and the mainland.

Attitude of West German government to the question of revival of the country's aircraft industry was discussed at a recent closed session of the German Institute of the Aeronautical Sciences, but no announcement was made on conclusions or decisions reached. Reluctance of Bonn authorities to sponsor a revival of aircraft manufacturing has been attributed to the heavy outlay of foreign currency, chiefly dollars, which would be required to rehabilitate the industry.

The Payen experimental flying wing, powered by a Turbomeca jet, is now practically complete and will shortly start wind tunnel tests at Chalais Meudon. If those prove satisfactory, the flight-test program should begin before fall.

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AIRPORTS

New airport opened recently at Langenhagen, near Hanover, Germany, is the first government-built field to be opened in western Germany since the end of the war. BEA, KLM, Sabena and Swissair, among others, will use the field, which is being run by a German staff under a British controller.

Kenya government will soon consider plans for a new international airport at Embakasi, near Nairobi's present international field of Eastleigh. Engineers have submitted plans for construction of the field over a period of three or four years at a cost of between $5,600,000 and $7,000,000. Airport would have a single runway 13,000 ft. long by 200 ft. wide, with 3,000-ft. over-runs and 75-ft. taxiways. Because Eastleigh is too small for BOAC's Comets, the government is anxious to start as soon as possible, and the British Air Ministry and Ministry of Civil Aviation will be invited to make some contribution in financing the project.

New passenger terminal at Galeao International Airport, Rio de Janeiro, has been dedicated, and plans are being considered for a 60-room hotel at the airport.

Control center at Orly Airport, Paris, is now using a panoramic radar, permitting scanning up to 125 miles. High-frequency radio-goniometers are now installed at Orly, Le Bourget, and Marignane airports in France.

News At Deadline

30% Avgas Cuts To Last 28 Days

Airlines were drawing up plans as this issue went to press to conform with the Petroleum Administration for Defense order limiting use of aviation gasoline. The order, which resulted from the walkout of 90,000 oil workers, was issued because the strike had cut off about 30% of all avgas output.

Effective May 6, it was ordered that:

• **No gasoline may be used** for sport or pleasure flying for the next 28 days.

• **Domestic and international airlines** for the next 28 days are limited to 65% of the gas they used during March. Because of the longer period in March, this amounted to a 30% reduction. Private planes are under similar restrictions.

• **Foreign lines may buy** up to 65% of their March purchases.

• **No airline may receive** more than 30% of its gas quota during any consecutive seven-day period.

Meanwhile, the Air Force curtailed all flying except that in the Korean war zone.

CAB Will Demand Airlines Carry Insurance

A regulation which would require all air carriers to have "adequate" insurance against potential liability for injury or damages to passengers or to third persons and property on the ground has been proposed by the Civil Aeronautics Board. Comments may be forwarded to the Board until June 4.

The proposal is tentative, but CAB said it is "firmly resolved" to require an insurance program for the "protection of the public . . . and to protect the assets of air carriers against the effects which losses from accidents might otherwise have."

Minimum required coverage would be:

$25,000 passenger liability per person per accident.

$25,000 public bodily injury liability per person and $250,000 per accident.

$250,000 property damage per accident.

For planes under 12,500 pounds maximum certificated take-off weight, minimum insurance coverage would be $100,000 per accident for public bodily injury and property damage.

New rule would apply to 48 certificated carriers (including foreign lines serving the U.S.), 76 large irregulars, 2,321 small irregulars, and 118 Alaskan carriers.

Coverage required for passenger liability would not be limited geographically, so long as the flight is to or from a point in the U.S., but coverage for public liability would be limited to areas within the U.S. Proposed rules provide for certification by insuring companies that the required coverage is in effect for the particular carrier in question.

Mid-West To Stop May 15

Mid-West Airlines, whose local service certificate has been terminated by CAB, has received Board permission to terminate operations on May 15 instead of July 1.

CAB had ordered the July 1 date, but MWA informed it that the nonrenewal decision was acceptable, but that the earlier effective date would result in savings to the airline and to the government. CAB agreed.

Railroads Ask End To Non-Sked Operations

Continuance of non-scheduled airline activities was seen as a threat to the entire transportation industry of the nation last week by over 100 common carrier railroads. In a "man-bites-dog" twist, the rail carriers joined the scheduled airline industry in its fight against the non-skeds and asked CAB for permission to participate in the Board's over-all investigation of the non-sked industry.

Among railroads signing the CAB document were the New York Central, Baltimore & Ohio, Canadian Pacific, Chesapeake & Ohio, Pennsylvania, Atchison, Topeka and Sante Fe, and the Illinois Central.

Hearings in the non-sked case are set to start August 11 in Washington, with additional sessions slated for Miami, Los Angeles, and Seattle. Issues are whether there is a place in the air transportation scheme for large irregular carriers and, if so, which carriers shall occupy it. Over 50 non-sked lines are involved.

Comet Makes First African Run in 23½ Hrs.

Completing the 6,724-mile flight in 17 hours and 16 minutes flight time, a British Overseas Airways Corp. de Havilland Comet landed at Johannesburg at 1:33 p.m., G.M.T., on May 3, 23 hours, 38 minutes after departing London. Average flight speed for the trip was about 390 miles per hour. On board were 36 passengers, paying the regular one-way fare of $490, or the $822 round-trip fare, six crewmen, and 30 bags of mail.

Tigers Ask RFC Loan

A $7 million RFC loan has been applied for by The Flying Tiger Line to cover purchase of seven Douglas DC-6A's which the certificated cargo carrier has already ordered. Planes are scheduled for delivery during the last three quarters of 1953.

Big 'Copter for Bell

Bell Aircraft Corp. is developing a 25-passenger helicopter, according to Lord Douglas of Kirtleside, chairman of British European Airways, who visited the Bell plant recently. Details of the design were not disclosed.

New TECO Coach Seat

Transport Equipment Company has developed a new TECO coach seat for the 60-passenger Constellation configuration, which TWA plans to use for its tourist service to Europe. It is an improvement on previous high-density designs.

TECO also is making the seats for Constellation coaches of British Overseas Airways Corporation.

PAL Ups 340 Order

Philippine Air Lines has increased its Convair 340 order from four to six, Col. Andres Soriano, president, has announced. Total cost for the twin-engine transports and spare parts now totals about $3,500,000. Delivery is to start early in 1953.

Stock Purchase Approved

Approval of agreement under which West Coast Airlines would purchase outstanding stock of Empire Air Lines and operate the two routes as a single system has been recommended by CAB Examiner William F. Cusick.

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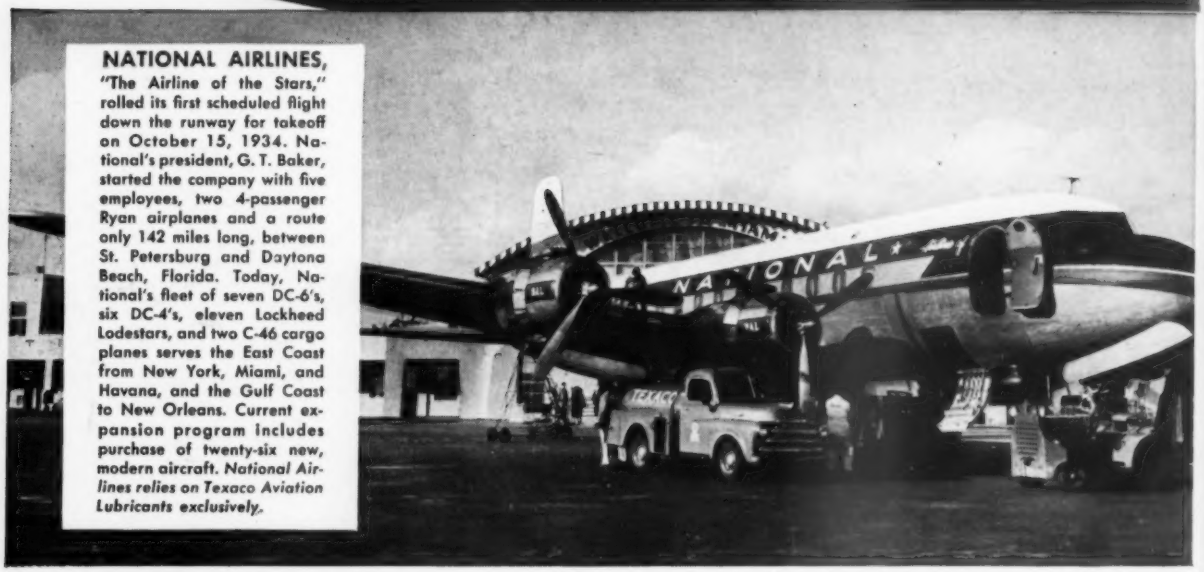

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